



New York Harbor to Chesapeake Bay



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

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**Regional Tide and
Tide Current Tables 1990**

**New York Harbor to
Chesapeake Bay**

Issued 1989

U.S. DEPARTMENT OF COMMERCE

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Tide Tables, Tidal Current Tables, Tidal Current Charts, United States Coast Pilots, Distance Tables, and Nautical Charts may be ordered from the NOAA, Distribution Branch, 6501 Lafayette Ave., Riverdale, MD 20737, (301) 436-6990. A list of authorized sales agents is published in the Nautical Chart Catalogs or may be obtained on request from the National Ocean Service. The publications may also be purchased across-the-counter at the NOAA, Distribution Branch office at 6501 Lafayette Ave., Riverdale, MD.

Technical questions relating to tide and current predictions, as well as requests for special predictions, should be addressed to the National Ocean Service, Estuarine and Ocean Physics Branch, 6001 Executive Blvd., Rockville, MD 20852, (301) 443-8060. Technical questions relating to other publications and nautical charts should be addressed to the National Ocean Service, Mapping and Charting Branch, 6001 Executive Blvd., Rockville, MD 20852, (301) 443-8157.

Corrections to this publication, after the date of printing, may appear in the quarterly summaries numbered 13, 26, 39, and 52 of the Notice to Mariners. They may also appear in the Local Notice to Mariners, published weekly, by the various United States Coast Guard Districts.

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IMPORTANT NOTICE

Tide predictions for reference stations in this publication are based upon analyses of tide observations for periods of at least one year. Since the extremes of meteorological conditions have been excluded from the analyses and predictions, the predicted tidal heights are those expected under average weather conditions. The mariner is cautioned that when weather conditions differ from the climatological average for the area, corresponding differences between predicted levels and those actually observed will be found. Generally, prolonged onshore winds or a low barometric pressure will produce higher levels than predicted, while the opposite will result in lower levels than those predicted.

Exclusive of weather conditions, the astronomical tide is subject to range variations which should be noted. Decreased ranges will occur near the times when the Moon is in apogee (apogean tides) or in quadrature (neap tides) and increased ranges when the Moon is in perigee (perigean tides) or in a new or full position (spring tides). A larger diurnal range may also result when the Moon is in its maximum declination (tropic tides). The actual range depends upon the extent to which combinations of these positions reinforce or detract one from the other. The effect of these astronomical lineups is included in the predictions and may be apparent upon inspection.

The mariner may be kept aware of the times of these astronomical events by referring to the astronomical data listed in this book. He should realize, however, that there is generally a time lag from a few hours to several days from the time of the astronomical event to the time of the resultant tide. During times of storm surges or when extreme weather conditions are imminent, it is prudent to remain closely advised by local weather forecasts as they relate to the effects upon the tide levels.

Daylight saving time is not used in this publication. All daily tide and tidal current predictions and predictions compiled by the use of Table 1.2 and 2.2 data are based on the standard time meridian indicated for each location. Predicted times may be converted to daylight saving times, where necessary, by adding 1 hour to these data. In converting times from the Astronomical Data page, it should be remembered that daylight saving time is based on a meridian 15° east of the normal standard meridian for a particular place.

INTRODUCTION

Tide Tables and Tidal Current Tables for the use of mariners have been published separately by the National Ocean Service (formerly the Coast and Geodetic Survey) since the late 1800's. This is the first edition of a Regional Tide and Tidal Current Table. It includes both the Tide and Tidal Current Predictions for the United States from New York Harbor to Chesapeake Bay.

This edition of the Regional Tide and Tidal Current Tables, New York Harbor to Chesapeake Bay, contains times and heights of the high and low water tide predictions for 10 tide reference stations and time and height differences for numerous subordinate locations. Also, it contains predicted times of slack water and times and speeds of maximum currents (flood and ebb) for 7 tidal current reference stations and time differences and speed ratios for numerous subordinate locations. Similar daily predictions for the subordinate locations may be computed by applying the correction factors of the subordinate locations to the predictions of the appropriate reference station. The speed of a current or the height of a tide at any time may be approximated, using the appropriate tables.

The related information section contains a table of sunrises and sunsets for every 5th day of the year for different latitudes, a table for the reduction of local mean time to standard time, a table of moonrises and moonsets for 4 places, a table of Greenwich mean time of the Moon's phases, apogee, perigee, greatest north and south and zero declination, the times of the solar equinoxes and solstices, and a glossary of terms.

All persons using these tables are invited to send information or suggestions for increasing their usefulness to: The Assistant Administrator, Attention: Tide and Current Prediction Section (N/OMA132), National Ocean Service, Rockville, Maryland 20852.

PART ONE
TIDE TABLES

LIST OF REFERENCE STATIONS

<i>Name of station</i>	<i>Datum below mean sea-level</i>	<i>Page</i>
Albany, New York	*2.5	4
Baltimore, Maryland	0.8	32
Breakwater Harbor, Delaware	2.3	20
Hampton Roads, Virginia	1.4	40
New York, New York	2.6	12
Philadelphia, Pennsylvania	*3.5	28
Reedy Point, Delaware	3.0	24
Sandy Hook, New Jersey	2.6	16
Washington, D.C.	*1.6	36
Willeys Point, New York	3.9	8

*Datum below mean river level.

Each datum figure above represents the difference in elevation between the local mean sea (or river) level and the reference level from which the predicted heights in table 1.1 were calculated.

Local mean sea level datum should be confused with the National Geodetic Vertical Datum which is the datum of the geodetic level net of the United States. Relationships between geodetic and local tidal datums are published in connection with the tidal bench mark data of the National Ocean Service

TABLE 1.1—DAILY TIDE PREDICTIONS

EXPLANATION OF TABLE

This table contains the predicted times and heights of the high and low waters for each day of the year at a number of places which are designated as reference stations. By using table 1.2, one can calculate the approximate times and heights of the tide at many other places which are called subordinate stations. Instructions on the use of the tidal differences are found in the explanation of table 1.2.

Height.—High water is the maximum height reached by each rising tide, and low water is the minimum height reached by each falling tide. High and low waters can be selected from the predictions by comparison of two consecutive heights.

Time.—The kind of time used for the predictions at each reference station is standard time for the time meridian at the bottom of each page. Daylight saving time is not used in this publication. If daylight saving time is required, add one (1) hour to the predicted time.

Datum.—The datum from which the predicted heights are referred is the same as that used for the local charts. The datum for the Atlantic Coast of the United States is mean lower low water (MLLW). The depression of the datum below mean sea level (MSL) for each of the reference stations of this volume is given on the preceding page.

Depth of water.—The nautical charts published by the United States and other maritime nations show the depth of the water as referred to a low water datum corresponding to that from which the predicted tidal heights are recorded. To find the actual depth of water at any time, the height of the tide should be added to the charted depth. If the height of the tide is negative, that is, if there is a minus sign (—) before the tide height, the height should be subtracted from the charted depth. For any time between high and low water, the height of the tide may be estimated from the heights of the preceding and the following tides, or table 1.3 may be used. The reference stations in table 1.1 contain the heights in centimeters as well as in feet.

Variation in sea level.—Changes in winds and barometric conditions cause variations in sea level from day to day. In general, with onshore winds or a low barometer the heights of both the high and low waters will be higher than predicted while with offshore winds or a high barometer they will be lower. There are also seasonal variations in sea level, but these variations have been included in the predictions for each station. At ocean stations the seasonal variation in sea level is usually less than half a foot.

At stations on tidal rivers the average seasonal variation in river level due to freshets and droughts may be considerably more than a foot. The predictions for these stations include an allowance for this seasonal variation representing average freshet and drought conditions. Unusual freshets or droughts, however, will cause the tides to be higher or lower, respectively, than predicted.

Number of tides.—There are usually two high and two low waters in a day. Tides follow the Moon more closely than they do the Sun, and the lunar or tidal day is about 50 minutes longer than the solar day. This causes the tide to occur later each day, and a tide that has occurred near the end of one calendar day will be followed by a corresponding tide that may skip the next day and occur in the early morning of the third day. Thus on certain days of each month only a single high or a single low water occurs.

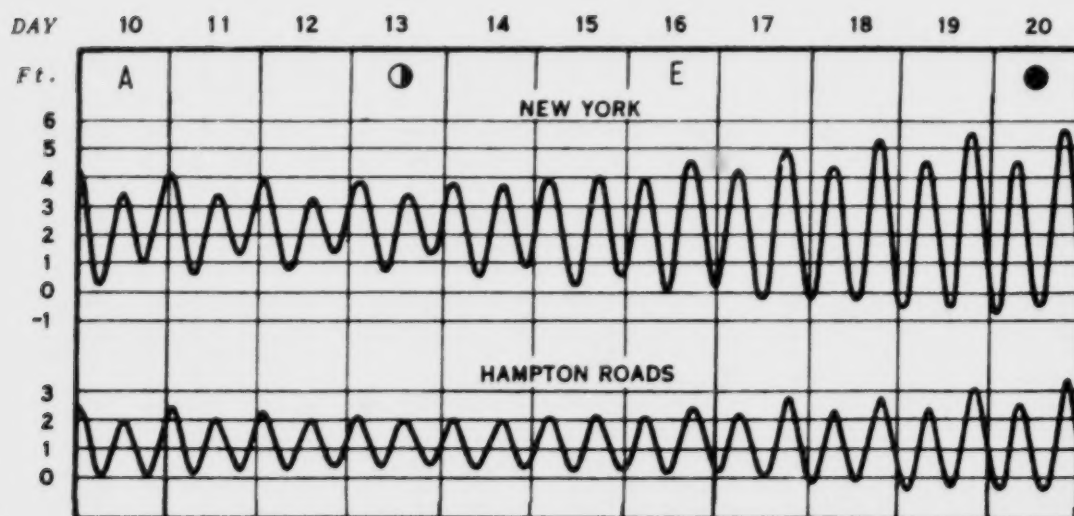
Table 1.1 —Daily Tide Predictions

Relation of tide to current.—In using these tide tables it must be remembered that they give the times and heights of high and low waters and not the times of turning of the current or slack water. The relation of the times of high and low water to the turning of the current depends upon a number of factors, so no simple or general rule can be given. For the predicted times of slack water, and other tidal current data, reference should be made to the tidal current tables in Part two of this publication.

Table 1.1 —Daily Tide Predictions

Typical tide curve.—The variation in the tide from day to day and from place to place are illustrated below by the tide curves for two representative ports in this region of the United States. It will be noted that the tidal range for the stations varies in this region but that the type is uniformly semidiurnal with principal variation following the changes in the moon's distance and phase.

TYPICAL TIDE CURVES



Lunar data:

- A - Moon in apogee
- ☾ - last quarter
- E - Moon on Equator
- - new Moon

Times and Heights of High and Low Waters

JANUARY								FEBRUARY								MARCH							
Time				Time				Time				Time				Time				Time			
Day				Day				Day				Day				Day				Day			
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm
1	0213	-0.3	-9	16	0249	-0.3	-9	1	0314	-0.2	-6	16	0345	0.3	9	1	0159	-0.1	-3	16	0226	0.5	15
M	0735	4.4	134	Tu	0839	4.6	140	Th	0855	5.2	158	F	0934	5.1	155	Th	0741	5.7	174	F	0812	5.4	165
	1422	0.3	9		1512	0.4	12		1555	0.3	9		1625	0.6	18		1439	0.3	9		1505	0.7	21
	1949	5.1	155		2040	4.5	137		2111	4.5	137		2138	4.1	125		2000	4.9	149		2016	4.4	134
2	0255	-0.3	-9	17	0335	-0.2	-6	2	0407	-0.1	-3	17	0436	0.4	12	2	0749	0.0	0	17	0309	0.7	21
Tu	0822	4.6	140	W	0925	4.6	140	F	0954	5.3	162	Sa	1026	5.1	155	F	0833	5.7	174	Sa	0855	5.4	165
	1517	0.3	9		1604	0.4	12		1657	0.4	12		1719	0.7	21		1536	0.4	12		1554	0.8	24
	2037	4.9	149		2127	4.2	128		2214	4.2	128		2232	3.9	119		2057	4.6	140		2101	4.3	131
3	0343	-0.3	-9	18	0423	0.0	0	3	0503	0.0	0	18	0528	0.5	15	3	0343	0.2	6	18	0358	0.8	24
W	0918	4.8	146	Th	1016	4.7	143	Sa	1057	5.3	162	Su	1121	5.1	155	Sa	0932	5.6	171	Su	0946	5.4	165
	1617	0.4	12		1659	0.5	15		1759	0.3	9		1815	0.7	21		1636	0.5	15		1647	0.9	27
	2130	4.6	140		2220	3.9	119		2322	4.0	122		2331	3.8	116		2201	4.4	134		2154	4.2	128
4	0436	-0.2	-6	19	0513	0.1	3	4	0605	0.1	3	19	0621	0.5	15	4	0444	0.3	9	19	0452	0.8	24
Th	1017	4.9	149	F	1109	4.8	146	Su	1201	5.3	162	M	1218	5.2	158	Su	1035	5.5	168	M	1039	5.4	165
	1718	0.4	12		1755	0.5	15		1900	0.2	6		1910	0.6	18		1738	0.5	15		1740	0.9	27
	2233	4.3	131		2315	3.8	116										2308	4.2	128		2251	4.1	125
5	0530	-0.2	-6	20	0604	0.2	6	5	0032	3.9	119	20	0031	3.8	116	5	0544	0.4	12	20	0545	0.9	27
F	1119	5.1	155	Sa	1203	4.9	149	M	0705	0.1	3	Tu	0716	0.5	15	M	1141	5.5	168	Tu	1136	5.4	165
	1819	0.3	9		1850	0.4	12		1305	5.4	165		1312	5.3	162		1839	0.4	12		1834	0.8	24
	2341	4.1	125						2000	0.1	3		2003	0.4	12						2353	4.2	128
6	0627	-0.2	-6	21	0013	3.6	110	6	0138	3.9	119	21	0129	3.9	119	6	0016	4.2	128	21	0643	0.8	24
Sa	1223	5.2	158	Su	0657	0.2	6	Tu	0803	0.1	3	W	0808	0.4	12	Tu	0645	0.4	12	W	1233	5.4	165
	1921	0.1	3		1257	5.0	152		1406	5.4	165		1403	5.4	165		1245	5.4	165		1926	0.7	21
					1943	0.3	9		2056	-0.1	-3		2053	0.3	9		1937	0.3	9				
7	0049	3.9	119	22	0112	3.6	110	7	0241	4.0	122	22	0222	4.1	125	7	0121	4.2	128	22	0052	4.3	131
Su	0726	-0.2	-6	M	0748	0.2	6	W	0902	0.0	0	Th	0859	0.3	9	W	0745	0.4	12	Th	0736	0.7	21
	1324	5.4	165		1350	5.2	158		1503	5.5	168		1454	5.5	168		1346	5.4	165		1326	5.5	168
	2020	-0.1	-3		2035	0.2	6		2149	-0.3	-9		2139	0.1	3		2031	0.1	3		2016	0.5	15
8	0154	3.9	119	23	0206	3.6	110	8	0337	4.2	128	23	0312	4.3	131	8	0223	4.4	134	23	0147	4.5	137
M	0822	-0.2	-6	Tu	0839	0.1	3	Th	0955	0.0	0	F	0947	0.3	9	Th	0843	0.3	9	F	0830	0.6	18
	1423	5.5	168		1438	5.3	162		1555	5.5	168		1537	5.6	171		1443	5.4	165		1417	5.5	168
	2116	-0.3	-9		2124	0.0	0		2238	-0.4	-12		2225	0.0	0		2123	0.0	0		2105	0.3	9
9	0256	3.9	119	24	0257	3.7	113	9	0429	4.4	134	24	0357	4.5	137	9	0318	4.6	140	24	0240	4.8	146
Tu	0918	-0.2	-6	W	0929	0.1	3	F	1046	0.0	0	Sa	1034	0.2	6	F	0936	0.2	6	Sa	0920	0.5	15
	1520	5.6	171		1526	5.4	165		1642	5.4	165		1621	5.6	171		1534	5.4	165		1506	5.5	168
	2211	-0.5	-15		2212	-0.1	-3		2324	-0.4	-12		2307	-0.1	-3		2213	-0.1	-3		2150	0.2	6
10	0352	4.0	122	25	0343	3.9	119	10	0515	4.5	137	25	0442	4.8	146	10	0406	4.9	149	25	0328	5.2	158
W	1011	-0.3	-9	Th	1014	0.1	3	Sa	1134	0.0	0	26	0525	5.1	155	Sa	1027	0.2	6	Su	1011	0.3	9
	1612	5.6	171		1608	5.5	168		1727	5.3	162		1703	5.6	171		1620	5.3	162		1552	5.5	168
	2300	-0.6	-18		2257	-0.2	-6						2350	-0.2	-6		2257	-0.1	-3		2234	0.1	3
11	0445	4.1	125	26	0426	4.0	122	11	0009	-0.4	-12	26	0525	5.1	155	11	0452	5.0	152	26	0416	5.5	168
Th	1103	-0.2	-6	F	1058	0.1	3	Su	0601	4.7	143	M	1208	0.1	3	Su	1114	0.2	6	M	1100	0.2	6
	1701	5.6	171		1649	5.5	168		1222	0.1	3		1743	5.5	168		1703	5.2	158		1638	5.5	168
	2348	-0.6	-18		2339	-0.3	-9		1806	5.1	155						2339	0.0	0		2318	0.0	0
12	0534	4.2	128	27	0508	4.2	128	12	0051	-0.3	-9	27	0030	-0.2	-6	12	0532	5.2	158	27	0502	5.8	177
F	1154	-0.2	-6	Sa	1143	0.1	3	M	0641	4.8	146	Tu	0608	5.4	165	M	1200	0.3	9	Tu	1149	0.2	6
	1747	5.4	165		1728	5.5	168		1309	0.2	6		1256	0.2	6		1744	5.0	152		1722	5.4	165
									1848	4.9	149		1826	5.3	162								
13	0034	-0.6	-18	28	0020	-0.3	-9	13	0133	-0.2	-6	28	0112	-0.2	-6	13	0021	0.1	3	28	0002	0.0	0
Sa	0622	4.3	131	Su	0547	4.5	137	Tu	0723	4.9	149	W	0654	5.5	171	Tu	0613	5.3	162	W	0545	6.0	183
	1241	-0.1	-3		1227	0.1	3		1355	0.3	9		1346	0.2	6		1246	0.4	12		1237	0.2	6
	1831	5.2	158		1806	5.4	165		1927	4.7	143		1912	5.1	155		1820	4.9	149		1808	5.3	162
14	0120	-0.5	-15	29	0101	-0.4	-12	14	0216	0.0	0	14	0102	0.2	6	14	0102	0.2	6	29	0046	0.0	0
Su	0707	4.4	134	M	0629	4.7	143	W	0805	5.0	152	M	0652	5.4	165	W	0652	5.4	165	Th	0633	6.1	186
	1331	0.1	3		1315	0.1	3		1443	0.5	15		1331	0.5	15		1331	0.5	15		1329	0.2	6
	1913	5.0	152		1846	5.3	162		2006	4.5	137		1857	4.7	143						1856	5.1	155
15	0204	-0.4	-12	30	0143	-0.3	-9	15	0301	0.1	3	15	0143	0.4	12	15	0143	0.4	12	30	0135	0.2	6
M	0754	4.5	137	Tu	0715	5.0	152	Th	0848	5.0	152	Th	0731	5.4	165	Th	0731	5.4	165	F	0723	6.1	186
	1421	0.2	6		1403	0.2	6		1534	0.6	18		1416	0.6	18		1416	0.6	18		1421	0.3	9
	1956	4.7	143		1929	5.1	155		2048	4.3	131		1936	4.6	140						1949	4.9	149
				31	0226	-0.3	-9													31	0227	0.3	9
				W	0802	5.1	155													Sa	0815	6.0	183
					1458	0.3	9														1517	0.4	12
					2016	4.8	146														2045	4.7	143

Time meridian 75° W. 0000 is midnight, 1200 is noon.
 Heights are referred to mean low water during lowest river stages which is the chart datum of soundings.

APRIL

MAY

JUNE

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean low water during lowest river stages which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

AUGUST

SEPTEMBER

Time Height				Time Height				Time Height				Time Height				Time Height				Time Height			
Day		Day		Day		Day		Day		Day		Day		Day		Day		Day		Day		Day	
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 0605	0.3 9	16 0549	0.2 6	1 0038	4.8 146	16 0031	5.0 152	1 0145	4.9 149	16 0214	5.0 152	1 0605	0.3 9	16 0549	0.2 6	1 0038	4.8 146	16 0031	5.0 152	1 0145	4.9 149	16 0214	5.0 152
Su 1137	3.8 116	M 1103	4.0 122	W 0722	0.0 0	Th 0729	-0.2 -6	Sa 0833	-0.2 -6	Su 0856	-0.5 -15	Su 1137	3.8 116	M 1103	4.0 122	W 0722	0.0 0	Th 0729	-0.2 -6	Sa 0833	-0.2 -6	Su 0856	-0.5 -15
1819	-0.1 -3	1756	-0.3 -9	1253	3.3 101	1303	3.6 110	1406	3.7 113	1449	4.3 131	1819	-0.1 -3	1756	-0.3 -9	1253	3.3 101	1303	3.6 110	1406	3.7 113	1449	4.3 131
		2347	5.1 155	1929	-0.1 -3	1934	-0.3 -9	2040	-0.1 -3	2110	-0.3 -9			2347	5.1 155	1929	-0.1 -3	1934	-0.3 -9	2040	-0.1 -3	2110	-0.3 -9
2 0023	4.8 146	17 0651	0.0 0	2 0130	4.9 149	17 0134	5.1 155	2 0235	5.0 152	17 0307	4.9 149	2 0023	4.8 146	17 0651	0.0 0	2 0130	4.9 149	17 0134	5.1 155	2 0235	5.0 152	17 0307	4.9 149
M 0701	0.2 6	Tu 1212	3.8 116	Th 0815	-0.1 -3	F 0827	-0.4 -12	Su 0920	-0.3 -9	M 0945	-0.5 -15	M 0701	0.2 6	Tu 1212	3.8 116	Th 0815	-0.1 -3	F 0827	-0.4 -12	Su 0920	-0.3 -9	M 0945	-0.5 -15
1236	3.7 113	1853	-0.3 -9	1348	3.4 104	1407	3.7 113	1455	3.9 119	1541	4.5 137	1236	3.7 113	1853	-0.3 -9	1348	3.4 104	1407	3.7 113	1455	3.9 119	1541	4.5 137
1912	-0.1 -3			2020	-0.1 -3	2032	-0.4 -12	2130	-0.1 -3	2203	-0.3 -9	1912	-0.1 -3			2020	-0.1 -3	2032	-0.4 -12	2130	-0.1 -3	2203	-0.3 -9
3 0115	4.9 149	18 0050	5.2 158	3 0220	5.0 152	18 0233	5.1 155	3 0321	5.0 152	18 0357	4.8 146	3 0115	4.9 149	18 0050	5.2 158	3 0220	5.0 152	18 0233	5.1 155	3 0321	5.0 152	18 0357	4.8 146
Tu 0755	0.1 3	W 0750	-0.2 -6	F 0904	-0.2 -6	Sa 0920	-0.6 -18	M 1005	-0.4 -12	Tu 1032	-0.6 -18	Tu 0755	0.1 3	W 0750	-0.2 -6	F 0904	-0.2 -6	Sa 0920	-0.6 -18	M 1005	-0.4 -12	Tu 1032	-0.6 -18
1329	3.6 110	1318	3.7 113	1439	3.4 104	1507	3.9 119	1541	4.1 125	1629	4.7 143	1329	3.6 110	1318	3.7 113	1439	3.4 104	1507	3.9 119	1541	4.1 125	1629	4.7 143
2001	-0.1 -3	1952	-0.3 -9	2109	-0.2 -6	2128	-0.4 -12	2218	-0.2 -6	2253	-0.3 -9	2001	-0.1 -3	1952	-0.3 -9	2109	-0.2 -6	2128	-0.4 -12	2218	-0.2 -6	2253	-0.3 -9
4 0205	5.1 155	19 0150	5.3 162	4 0308	5.1 155	19 0327	5.1 155	4 0403	5.0 152	19 0442	4.7 143	4 0205	5.1 155	19 0150	5.3 162	4 0308	5.1 155	19 0327	5.1 155	4 0403	5.0 152	19 0442	4.7 143
W 0847	-0.1 -3	Th 0846	-0.4 -12	Sa 0953	-0.4 -12	Su 1011	-0.7 -21	Tu 1047	-0.5 -15	W 1117	-0.5 -15	W 0847	-0.1 -3	Th 0846	-0.4 -12	Sa 0953	-0.4 -12	Su 1011	-0.7 -21	Tu 1047	-0.5 -15	W 1117	-0.5 -15
1422	3.5 107	1422	3.8 116	1526	3.6 110	1600	4.1 125	1623	4.4 134	1712	4.8 146	1422	3.5 107	1422	3.8 116	1526	3.6 110	1600	4.1 125	1623	4.4 134	1712	4.8 146
2051	-0.1 -3	2049	-0.4 -12	2157	-0.2 -6	2221	-0.5 -15	2302	-0.2 -6	2340	-0.3 -9	2051	-0.1 -3	2049	-0.4 -12	2157	-0.2 -6	2221	-0.5 -15	2302	-0.2 -6	2340	-0.3 -9
5 0254	5.2 158	20 0249	5.4 165	5 0352	5.1 155	20 0418	5.1 155	5 0442	5.0 152	20 0524	4.5 137	5 0254	5.2 158	20 0249	5.4 165	5 0352	5.1 155	20 0418	5.1 155	5 0442	5.0 152	20 0524	4.5 137
Th 0936	-0.2 -6	F 0941	-0.6 -18	Su 1037	-0.5 -15	M 1100	-0.8 -24	W 1128	-0.5 -15	Th 1159	-0.4 -12	Th 0936	-0.2 -6	F 0941	-0.6 -18	Su 1037	-0.5 -15	M 1100	-0.8 -24	W 1128	-0.5 -15	Th 1159	-0.4 -12
1512	3.6 110	1520	3.8 116	1610	3.7 113	1649	4.3 131	1705	4.6 140	1753	4.9 149	1512	3.6 110	1520	3.8 116	1610	3.7 113	1649	4.3 131	1705	4.6 140	1753	4.9 149
2138	-0.1 -3	2144	-0.5 -15	2242	-0.2 -6	2312	-0.4 -12	2349	-0.2 -6			2138	-0.1 -3	2144	-0.5 -15	2242	-0.2 -6	2312	-0.4 -12	2349	-0.2 -6		
6 0339	5.2 158	21 0344	5.4 165	6 0432	5.1 155	21 0504	4.9 149	6 0521	4.9 149	21 0603	4.3 131	6 0339	5.2 158	21 0344	5.4 165	6 0432	5.1 155	21 0504	4.9 149	6 0521	4.9 149	21 0603	4.3 131
F 1022	-0.3 -9	Sa 1033	-0.7 -21	M 1119	-0.5 -15	Tu 1145	-0.8 -24	Th 1208	-0.6 -18	F 1242	-0.3 -9	F 1022	-0.3 -9	Sa 1033	-0.7 -21	M 1119	-0.5 -15	Tu 1145	-0.8 -24	Th 1208	-0.6 -18	F 1242	-0.3 -9
1557	3.6 110	1616	4.0 122	1652	3.9 119	1737	4.4 134	1745	4.9 149	1835	5.0 152	1557	3.6 110	1616	4.0 122	1652	3.9 119	1737	4.4 134	1745	4.9 149	1835	5.0 152
2224	0.0 0	2238	-0.5 -15	2326	-0.2 -6							2224	0.0 0	2238	-0.5 -15	2326	-0.2 -6						
7 0421	5.3 162	22 0434	5.4 165	7 0511	5.1 155	22 0600	-0.4 -12	7 0603	-0.2 -6	22 0644	4.1 125	7 0421	5.3 162	22 0434	5.4 165	7 0511	5.1 155	22 0600	-0.4 -12	7 0603	-0.2 -6	22 0644	4.1 125
Sa 1107	-0.3 -9	Su 1124	-0.8 -24	Tu 1201	-0.6 -18	W 0547	4.8 146	F 0602	4.8 146	Sa 0644	4.1 125	Sa 1107	-0.3 -9	Su 1124	-0.8 -24	Tu 1201	-0.6 -18	W 0547	4.8 146	F 0602	4.8 146	Sa 0644	4.1 125
1639	3.7 113	1709	4.1 125	1732	4.1 125	1229	-0.7 -21	1250	-0.5 -15	1324	-0.1 -3	1639	3.7 113	1709	4.1 125	1732	4.1 125	1229	-0.7 -21	1250	-0.5 -15	1324	-0.1 -3
2309	0.0 0	2328	-0.4 -12	1819	4.5 137	1819	4.5 137	1828	5.1 155	1914	5.0 152	2309	0.0 0	2328	-0.4 -12	1819	4.5 137	1819	4.5 137	1828	5.1 155	1914	5.0 152
8 0501	5.3 162	23 0523	5.3 162	8 0009	-0.1 -3	23 0049	-0.3 -9	8 0122	-0.2 -6	23 0159	0.0 0	8 0501	5.3 162	23 0523	5.3 162	8 0009	-0.1 -3	23 0049	-0.3 -9	8 0122	-0.2 -6	23 0159	0.0 0
Su 1149	-0.4 -12	M 1211	-0.8 -24	W 0549	5.0 152	Th 0628	4.5 137	Sa 0645	4.6 140	Su 0723	4.0 122	Su 1149	-0.4 -12	M 1211	-0.8 -24	W 0549	5.0 152	Th 0628	4.5 137	Sa 0645	4.6 140	Su 0723	4.0 122
1721	3.8 116	1758	4.2 128	1242	-0.6 -18	1312	-0.6 -18	1333	-0.5 -15	1407	0.1 3	1721	3.8 116	1758	4.2 128	1242	-0.6 -18	1312	-0.6 -18	1333	-0.5 -15	1407	0.1 3
2351	0.0 0			1811	4.4 134	1904	4.6 140	1914	5.2 158	1956	5.0 152	2351	0.0 0			1811	4.4 134	1904	4.6 140	1914	5.2 158	1956	5.0 152
9 0539	5.2 158	24 0020	-0.4 -12	9 0056	-0.1 -3	24 0136	-0.2 -6	9 0213	-0.1 -3	24 0245	0.1 3	9 0539	5.2 158	24 0020	-0.4 -12	9 0056	-0.1 -3	24 0136	-0.2 -6	9 0213	-0.1 -3	24 0245	0.1 3
M 1232	-0.4 -12	Tu 0611	5.1 155	Th 0627	4.9 149	F 0710	4.3 131	Su 0730	4.4 134	M 0805	3.8 116	M 1232	-0.4 -12	Tu 0611	5.1 155	Th 0627	4.9 149	F 0710	4.3 131	Su 0730	4.4 134	M 0805	3.8 116
1758	3.9 119	1258	-0.8 -24	1322	-0.6 -18	1356	-0.4 -12	1419	-0.4 -12	1452	0.2 6	1758	3.9 119	1258	-0.8 -24	1322	-0.6 -18	1356	-0.4 -12	1419	-0.4 -12	1452	0.2 6
		1845	4.3 131	1851	4.6 140	1946	4.7 143	2003	5.3 162	2040	4.9 149			1845	4.3 131	1851	4.6 140	1946	4.7 143	2003	5.3 162	2040	4.9 149
10 0034	0.1 3	25 0110	-0.2 -6	10 0143	-0.1 -3	25 0226	0.0 0	10 0309	0.0 0	25 0335	0.2 6	10 0034	0.1 3	25 0110	-0.2 -6	10 0143	-0.1 -3	25 0226	0.0 0	10 0309	0.0 0	25 0335	0.2 6
Tu 0616	5.2 158	W 0653	4.8 146	F 0707	4.7 143	Sa 0752	4.0 122	M 0825	4.2 128	Tu 0849	3.7 113	Tu 0616	5.2 158	W 0653	4.8 146	F 0707	4.7 143	Sa 0752	4.0 122	M 0825	4.2 128	Tu 0849	3.7 113
1312	-0.4 -12	1344	-0.7 -21	1402	-0.5 -15	1441	-0.2 -6	1512	-0.2 -6	1543	0.3 9	1312	-0.4 -12	1344	-0.7 -21	1402	-0.5 -15	1441	-0.2 -6	1512	-0.2 -6	1543	0.3 9
1835	4.1 125	1933	4.4 134	1937	4.8 146	2032	4.7 143	2059	5.2 158	2129	4.9 149	1835	4.1 125	1933	4.4 134	1937	4.8 146	2032	4.7 143	2059	5.2 158	2129	4.9 149
11 0117	0.1 3	26 0200	-0.1 -3	11 0234	0.0 0	26 0315	0.1 3	11 0407	0.0 0	26 0427	0.3 9	11 0117	0.1 3	26 0200	-0.1 -3	11 0234	0.0 0	26 0315	0.1 3	11 0407	0.0 0	26 0427	0.3 9
W 0653	5.1 155	Th 07																					

Times and Heights of High and Low Waters

OCTOBER							NOVEMBER							DECEMBER															
Time			Height	Time			Height	Time			Height	Time			Height	Time			Height										
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm					
1	0158	4.9	149		16	0243	4.6	140		1	0259	4.6	140		16	0354	4.0	122		1	0326	4.3	131		16	0412	3.7	113	
M	0844	-0.2	-6		Tu	0918	-0.3	-9		Th	0939	-0.3	-9		F	1018	-0.1	-3		Sa	0957	-0.4	-12		Su	1034	0.0	0	
	1423	4.3	131			1518	4.9	149			1526	5.4	165			1618	5.3	162			1550	5.8	177			1634	5.4	165	
	2102	0.0	0			2143	-0.2	-6			2217	-0.2	-6			2256	-0.2	-6			2248	-0.5	-15			2316	-0.3	-9	
2	0245	4.9	149		17	0334	4.5	137		2	0350	4.6	140		17	0436	3.9	119		2	0419	4.3	131		17	0453	3.7	113	
Tu	0929	-0.3	-9		W	1004	-0.3	-9		F	1024	-0.4	-12		Sa	1102	0.0	0		Su	1048	-0.4	-12		M	1119	0.1	3	
	1510	4.6	140			1603	5.1	155			1613	5.6	171			1659	5.4	165			1641	5.9	180			1713	5.4	165	
	2150	-0.1	-3			2233	-0.2	-6			2306	-0.3	-9			2341	-0.2	-6			2337	-0.6	-18						
3	0331	4.9	149		18	0419	4.4	134		3	0437	4.6	140		18	0518	3.9	119		3	0511	4.3	131		18	0001	-0.3	-9	
W	1012	-0.4	-12		Th	1048	-0.2	-6		Sa	1109	-0.4	-12		Su	1144	0.1	3		M	1138	-0.4	-12		Tu	0532	3.8	116	
	1554	5.0	152			1646	5.2	158			1659	5.8	177			1739	5.3	162			1730	5.9	180			1201	0.1	3	
	2239	-0.2	-6			2319	-0.2	-6			2355	-0.4	-12											1752	5.3	162			
4	0416	4.8	146		19	0501	4.2	128		4	0526	4.5	137		19	0024	-0.2	-6		4	0027	-0.6	-18		19	0043	-0.2	-6	
Th	1055	-0.4	-12		F	1131	-0.1	-3		Su	1157	-0.3	-9		M	0556	3.9	119		Tu	0603	4.3	131		W	0609	3.8	116	
	1637	5.2	158			1725	5.2	158			1747	5.8	177			1226	0.2	6			1228	-0.3	-9			1242	0.2	6	
	2326	-0.3	-9												1817	5.3	162			1819	5.8	177			1828	5.3	162		
5	0458	4.8	146		20	0004	-0.2	-6		5	0046	-0.4	-12		20	0109	-0.1	-3		5	0118	-0.6	-18		20	0123	-0.2	-6	
F	1138	-0.4	-12		Sa	0540	4.1	125		M	0615	4.4	134		Tu	0632	3.8	116		W	0655	4.3	131		Th	0647	3.9	119	
	1721	5.5	168			1211	0.0	0			1247	-0.2	-6			1308	0.3	9			1323	-0.2	-6			1325	0.3	9	
						1804	5.2	158			1835	5.8	177			1853	5.3	162			1910	5.6	171			1904	5.2	158	
6	0015	-0.3	-9		21	0048	-0.1	-3		6	0136	-0.4	-12		21	0151	0.0	0		6	0209	-0.5	-15		21	0205	-0.2	-6	
Sa	0543	4.7	143		Su	0619	4.0	122		Tu	0707	4.3	131		W	0710	3.9	119		Th	0748	4.3	131		F	0726	4.1	125	
	1221	-0.4	-12			1255	0.2	6			1339	-0.1	-3			1352	0.4	12			1418	0.0	0			1410	0.4	12	
	1806	5.6	171			1843	5.2	158			1927	5.6	171			1933	5.2	158			2002	5.3	162			1941	5.1	155	
7	0104	-0.3	-9		22	0132	0.0	0		7	0229	-0.3	-9		22	0237	0.1	3		7	0301	-0.5	-15		22	0247	-0.1	-3	
Su	0629	4.5	137		M	0656	3.9	119		W	0802	4.3	131		Th	0752	3.9	119		F	0844	4.3	131		Sa	0810	4.2	128	
	1308	-0.3	-9			1337	0.3	9			1434	0.0	0			1439	0.5	15			1514	0.1	3			1458	0.5	15	
	1853	5.6	171			1923	5.2	158			2023	5.4	165			2014	5.1	155			2056	5.0	152			2021	4.9	149	
8	0155	-0.2	-6		23	0218	0.1	3		8	0324	-0.2	-6		23	0322	0.1	3		8	0353	-0.4	-12		23	0332	-0.1	-3	
M	0719	4.4	134		Tu	0736	3.9	119		Th	0903	4.2	128		F	0837	4.0	122		Sa	0943	4.4	134		Su	0854	4.4	134	
	1358	-0.2	-6			1421	0.4	12			1534	0.2	6			1528	0.6	18			1613	0.2	6			1551	0.6	18	
	1944	5.5	168			2004	5.1	155			2121	5.2	158			2100	5.0	152			2151	4.6	140			2107	4.7	143	
9	0250	-0.1	-3		24	0306	0.2	6		9	0420	-0.2	-6		24	0408	0.1	3		9	0446	-0.3	-9		24	0417	-0.1	-3	
Tu	0813	4.2	128		W	0818	3.8	116		F	1004	4.2	128		Sa	0926	4.1	125		Su	1041	4.5	137		M	0946	4.6	140	
	1453	0.0	0			1509	0.5	15			1636	0.3	9			1622	0.6	18			1713	0.3	9			1648	0.6	18	
	2040	5.4	165			2050	5.0	152			2221	4.9	149			2148	4.8	146			2251	4.3	131			2158	4.5	137	
10	0346	-0.1	-3		25	0354	0.3	9		10	0517	-0.2	-6		25	0457	0.1	3		10	0539	-0.2	-6		25	0508	-0.1	-3	
W	0914	4.1	125		Th	0907	3.8	116		Sa	1107	4.3	131		Su	1023	4.3	131		M	1139	4.6	140		Tu	1045	4.8	146	
	1553	0.1	3			1600	0.6	18			1737	0.3	9			1719	0.6	18			1811	0.3	9			1747	0.5	15	
	2142	5.2	158			2139	4.9	149			2323	4.7	143			2243	4.6	140			2351	4.1	125			2258	4.2	128	
11	0445	0.0	0		26	0445	0.3	9		11	0612	-0.2	-6		26	0547	0.0	0		11	0632	-0.2	-6		26	0559	-0.1	-3	
Th	1020	4.0	122		F	1002	3.9	119		Su	1208	4.5	137		M	1121	4.5	137		Tu	1236	4.8	146		W	1143	5.0	152	
	1655	0.2	6			1655	0.6	18			1836	0.2	6			1816	0.5	15			1909	0.2	6			1847	0.3	9	
	2246	5.0	152			2234	4.9	149							2339	4.5	137												
12	0544	0.0	0		27	0536	0.2	6		12	0025	4.5	137		27	0638	0.0	0		12	0048	3.9	119		27	0002	4.1	125	
F	1126	4.0	122		Sa	1100	4.0	122		M	0705	-0.2	-6		Tu	1219	4.7	143		W	0724	-0.1	-3		Th	0652	-0.1	-3	
	1758	0.2	6			1751	0.6	18			1308	4.7	143			1915	0.3	9			1329	5.0	152			1243	5.2	158	
	2350	4.9	149			2327	4.8	146			1934	0.1	3								2004	0.0	0			1945	0.1	3	
13	0642	+0.1	-3		28	0628	0.1	3		13	0122	4.3	131		28	0038	4.4	134		13	0147	3.8	116		28	0105	4.0	122	
Sa	1232	4.2	128		Su	1159	4.2	128		Tu	0757	-0.2	-6		W	0727	-0.1	-3		Th	0814	-0.1	-3		F	0748	-0.2	-6	
	1858	0.1	3			1847	0.5	15			1401	4.9	149			1315	5.0	152			1419	5.1	155			1342	5.4	165	
											2030	0.0	0			2009	0.1	3			2056	-0.1	-3			2041	-0.1	-3	
14	0052	4.8	146		29	0025	4.7	143		14	0218	4.2	128		29	0135	4.3	131		14	0239	3.7	113		29	0208	4.0	122	
Su	0736	-0.2	-6		M	0717	0.0	0		W	0846	-0.2	-6		Th	0817	-												

Times and Heights of High and Low Waters

JANUARY								FEBRUARY								MARCH							
Time		Height	Time		Height	Time		Height	Time		Height	Time		Height	Time		Height						
Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm				
1	0124	7.6	232	16	0258	7.0	213	1	0236	7.8	238	16	0308	6.8	207	1	0127	8.3	253				
M	0743	0.1	3	Tu	0934	0.4	12	Th	0918	-0.1	-3	F	0942	1.0	30	Th	0814	-0.6	-18				
	1337	7.7	235		1516	6.6	201		1505	6.8	207		1537	6.1	186		1356	7.3	223				
	2009	-0.3	-9		2144	0.5	15		2124	0.0	0		2134	1.1	34		2017	-0.2	-6				
2	0209	7.6	232	17	0344	6.9	210	2	0331	7.6	232	17	0352	6.7	204	2	0217	8.0	244				
iu	0835	0.1	3	W	1024	0.7	21	F	1031	0.2	6	Sa	1035	1.2	37	F	0916	-0.2	-6				
	1428	7.4	226		1606	6.2	189		1606	6.4	195		1630	5.8	177		1452	6.8	207				
	2054	-0.2	-6		2216	0.8	24		2221	0.5	15		2222	1.4	43		2110	0.3	9				
3	0259	7.6	232	18	0430	6.7	204	3	0434	7.3	223	18	0443	6.5	198	3	0313	7.6	232				
W	0929	0.2	6	Th	1120	0.9	27	Sa	1211	0.3	9	Su	1159	1.4	43	Sa	1043	0.2	6				
	1521	7.0	213		1707	5.9	180		1722	6.0	183		1734	5.8	177		1601	6.3	192				
	2146	0.0	0		2256	1.1	34		2353	0.8	24		2320	1.6	49		2227	0.8	24				
4	0353	7.5	229	19	0530	6.6	201	4	0550	7.0	213	19	0541	6.5	198	4	0422	7.1	216				
Th	1036	0.3	9	F	1219	1.0	30	Su	1329	0.2	6	M	1317	1.3	40	Su	1205	0.4	12				
	1623	6.6	201		1811	5.8	177		1910	5.9	180		1907	5.9	180		1744	6.1	186				
	2243	0.3	9		2351	1.3	40																
5	0453	7.4	226	20	0627	6.5	198	5	0136	0.8	24	20	0029	1.6	49	5	0017	1.0	30				
F	1209	0.3	9	Sa	1317	1.0	30	M	0733	7.1	216	Tu	0648	6.6	201	M	0614	6.9	210				
	1729	6.3	192		1915	5.8	177		1434	-0.1	-3		1416	1.1	34		1317	0.3	9				
	2354	0.5	15						2026	6.2	189		2008	6.1	186		1912	6.2	189				
6	0601	7.4	226	21	0056	1.4	43	6	0247	0.5	15	21	0149	1.4	43	6	0133	0.8	24				
Sa	1335	0.1	3	Su	0725	6.6	201	Tu	0847	7.3	223	W	0757	6.9	210	Tu	0739	7.1	216				
	1854	6.1	186		1410	0.9	27		1532	-0.4	-12		1503	0.7	21		1421	0.1	3				
					2008	5.9	180		2127	6.6	201		2053	6.5	198		2018	6.6	201				
7	0125	0.5	15	22	0157	1.4	43	7	0346	0.1	3	22	0253	1.0	30	7	0239	0.5	15				
Su	0717	7.4	226	M	0816	6.8	207	W	0946	7.6	232	Th	0843	7.2	219	W	0842	7.3	223				
	1445	-0.2	-6		1459	0.7	21		1625	-0.7	-21		1544	0.3	9		1515	-0.2	-6				
	2021	6.2	189		2058	6.1	186		2219	7.0	213		2127	6.9	210		2112	7.1	216				
8	0246	0.4	12	23	0248	1.2	37	8	0438	-0.2	-6	23	0344	0.5	15	8	0333	0.1	3				
M	0834	7.6	232	Tu	0856	7.0	213	Th	1037	7.8	238	F	0927	7.5	229	Th	0935	7.6	232				
	1543	-0.6	-18		1543	0.4	12		1713	-0.8	-24		1621	-0.1	-3		1604	-0.4	-12				
	2128	6.5	198		2140	6.4	195		2305	7.3	223		2159	7.4	226		2202	7.4	226				
9	0349	0.1	3	24	0332	1.0	30	9	0526	-0.5	-15	24	0425	0.0	0	9	0425	-0.3	-9				
Tu	0941	7.8	238	W	0927	7.2	219	F	1124	7.8	238	Sa	1010	7.8	238	F	1025	7.7	235				
	1638	-0.9	-27		1623	0.2	6		1756	-0.9	-27		1655	-0.4	-12		1650	-0.5	-15				
	2225	6.8	207		2212	6.7	204		2347	7.5	229		2236	7.8	238		2245	7.7	235				
10	0446	-0.2	-6	25	0410	0.7	21	10	0612	-0.6	-18	25	0508	-0.4	-12	10	0510	-0.5	-15				
W	1039	7.9	241	Th	0959	7.5	229	Sa	1205	7.7	235	Su	1050	8.0	244	Sa	1107	7.7	235				
	1729	-1.1	-34		1658	-0.1	-3		1837	-0.7	-21		1730	-0.7	-21		1732	-0.5	-15				
	2316	7.1	216		2237	7.0	213						2314	8.1	247		2324	7.8	238				
11	0538	-0.3	-9	26	0447	0.3	9	11	0028	7.6	232	26	0551	-0.8	-24	11	0552	-0.6	-18				
Th	1130	7.9	241	F	1032	7.7	235	Su	0654	-0.5	-15	M	1134	8.1	247	Su	1145	7.6	232				
	1816	-1.1	-34		1730	-0.4	-12		1245	7.5	229		1807	-0.8	-24		1810	-0.3	-9				
					2306	7.3	223		1915	-0.5	-15		2355	8.4	256		2359	7.7	235				
12	0005	7.3	223	27	0524	0.0	0	12	0105	7.5	229	27	0634	-0.9	-27	12	0629	-0.5	-15				
F	0628	-0.4	-12	Sa	1111	7.9	241	M	0733	-0.3	-9	Tu	1220	8.0	244	M	1222	7.4	226				
	1220	7.8	238		1800	-0.6	-18		1319	7.3	223		1845	-0.8	-24		1844	-0.1	-3				
	1901	-0.9	-27		2341	7.6	232		1949	-0.2	-6												
13	0050	7.4	226	28	0604	-0.3	-9	13	0135	7.4	226	28	0039	8.4	256	13	0031	7.6	232				
Sa	0715	-0.3	-9	Su	1151	8.0	244	Tu	0810	0.0	0	W	0722	-0.9	-27	Tu	0706	-0.3	-9				
	1306	7.6	232		1831	-0.7	-21		1351	6.9	210		1305	7.7	235		1253	7.2	219				
	1946	-0.7	-21						2010	0.2	6		1930	-0.6	-18		1906	0.2	6				
14	0135	7.3	223	29	0018	7.9	241	14	0204	7.2	219					14	0053	7.5	229				
Su	0801	-0.2	-6	M	0646	-0.5	-15	W	0841	0.3	9					W	0735	0.0	0				
	1348	7.3	223		1236	7.9	241		1423	6.6	201						1314	6.9	210				
	2027	-0.3	-9		1909	-0.7	-21		2027	0.5	15						1916	0.4	12				
15	0215	7.2	219	30	0101	8.0	244	15	0233	7.0	213					15	0115	7.4	226				
M	0846	0.1	3	Tu	0732	-0.5	-15	Th	0910	0.6	18					Th	0754	0.3	9				
	1430	6.9	210		1322	7.7	235		1457	6.3	192						1338	6.7	204				
	2107	0.1	3		1948	-0.6	-18		2054	0.8	24						1936	0.6	18				
				31	0147	8.0	244																
				W	0823	-0.4	-12																
					1411	7.3	223																
					2033	-0.3	-9																

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL								MAY								JUNE							
Time		Height		Time		Height		Time		Height		Time		Height		Time		Height					
Day				Day				Day				Day				Day							
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm				
1	0304	7.5	229	16	0229	7.4	226	1	0440	7.2	219	16	0250	7.5	229	1	0027	0.6	18				
Su	1038	0.2	6	M	0902	1.0	30	Tu	1129	0.3	9	W	0923	0.8	24	F	0629	6.9	210				
	1614	6.5	198		1506	6.7	204		1729	7.0	213		1527	7.2	219		1251	0.7	21				
	2250	1.0	30		2113	1.5	46		2354	0.9	27		2142	1.3	40		1856	7.5	229				
																	2323	0.7	21				
2	0435	7.1	216	17	0316	7.2	219	2	0557	7.1	216	17	0342	7.4	226	2	0125	0.5	15				
M	1151	0.4	12	Tu	0952	1.2	37	W	1230	0.4	12	Th	1014	0.8	24	Sa	0725	6.9	210				
	1748	6.5	198		1558	6.7	204		1833	7.2	219		1619	7.4	226		1343	0.7	21				
					2209	1.6	49						2242	1.1	34		1947	7.6	232				
3	0012	1.0	30	18	0411	7.1	216	3	0057	0.7	21	18	0440	7.2	219	3	0216	0.4	12				
Tu	0615	7.0	213	W	1048	1.2	37	Th	0702	7.1	216	F	1109	0.8	24	Su	0816	6.9	210				
	1257	0.4	12		1654	6.8	207		1327	0.4	12		1718	7.6	232		1430	0.8	24				
	1859	6.8	207		2311	1.5	46		1931	7.4	226		2349	0.9	27		2034	7.6	232				
4	0121	0.8	24	19	0511	7.1	216	4	0155	0.4	12	19	0542	7.1	216	4	0306	0.3	9				
W	0725	7.2	219	Th	1151	1.1	34	F	0758	7.2	219	Sa	1209	0.7	21	M	0906	6.9	210				
	1357	0.3	9		1753	7.1	216		1418	0.4	12		1815	7.8	238		1516	0.8	24				
	1957	7.1	216						2021	7.7	235						2119	7.7	235				
5	0219	0.4	12	20	0021	1.2	37	5	0248	0.1	3	20	0101	0.6	18	5	0353	0.2	6				
Th	0826	7.4	226	F	0616	7.1	216	Sa	0850	7.3	223	Su	0645	7.1	216	Tu	0948	6.9	210				
	1450	0.1	3		1254	0.9	27		1508	0.4	12		1307	0.5	15		1557	0.9	27				
	2050	7.5	229		1854	7.4	226		2107	7.8	238		1914	8.1	247		2159	7.7	235				
6	0314	0.0	0	21	0133	0.8	24	6	0336	-0.1	-3	21	0215	0.1	3	6	0436	0.2	6				
F	0917	7.5	229	Sa	0721	7.3	223	Su	0936	7.3	223	M	0748	7.2	219	W	1031	6.9	210				
	1539	0.0	0		1355	0.5	15		1551	0.4	12		1410	0.2	6		1636	1.0	30				
	2138	7.7	235		1950	7.8	238		2150	7.9	241		2010	8.4	256		2234	7.7	235				
7	0402	-0.2	-6	22	0240	0.2	6	7	0420	-0.2	-6	22	0319	-0.4	-12	7	0514	0.2	6				
Sa	1002	7.6	232	Su	0818	7.5	229	M	1018	7.2	219	Tu	0850	7.3	223	Th	1109	6.9	210				
	1623	-0.1	-3		1451	0.1	3		1632	0.5	15		1511	0.0	0		1707	1.0	30				
	2220	7.9	241		2042	8.3	253		2229	7.9	241		2107	8.6	262		2302	7.6	232				
8	0447	-0.4	-12	23	0335	-0.4	-12	8	0502	-0.2	-6	23	0420	-0.7	-21	8	0548	0.3	9				
Su	1045	7.6	232	M	0914	7.7	235	Tu	1057	7.2	219	W	0948	7.4	226	F	1139	6.9	210				
	1704	0.0	0		1541	-0.2	-6		1708	0.6	18		1611	-0.1	-3		1727	1.1	34				
	2257	7.9	241		2132	8.6	262		2302	7.8	238		2202	8.8	268		2316	7.7	235				
9	0528	-0.4	-12	24	0431	-0.8	-24	9	0540	-0.1	-3	24	0515	-1.0	-30	9	0618	0.4	12				
M	1124	7.4	226	Tu	1007	7.8	238	W	1134	7.0	213	Th	1047	7.5	229	Sa	1159	6.9	210				
	1738	0.1	3		1631	-0.4	-12		1736	0.8	24		1708	-0.2	-6		1749	1.1	34				
	2332	7.8	238		2222	8.8	268		2327	7.7	235		2255	8.8	268		2339	7.7	235				
10	0606	-0.3	-9	25	0524	-1.1	-34	10	0613	0.1	3	25	0611	-1.0	-30	10	0637	0.4	12				
Tu	1157	7.3	223	W	1057	7.8	238	Th	1201	6.9	210	F	1144	7.5	229	Su	1218	7.0	213				
	1809	0.3	9		1721	-0.5	-15		1751	0.9	27		1809	-0.1	-3		1821	1.0	30				
	2357	7.7	235		2311	8.9	271		2342	7.7	235		2351	8.6	262								
11	0638	-0.1	-3	26	0616	-1.1	-34	11	0639	0.3	9	26	0706	-0.9	-27	11	0014	7.8	238				
W	1224	7.1	216	Th	1149	7.7	235	F	1220	6.9	210	Sa	1242	7.5	229	M	0658	0.4	12				
	1824	0.6	18		1812	-0.3	-9		1806	1.0	30		1909	0.1	3		1250	7.2	219				
																	1858	1.0	30				
12	0014	7.6	232	27	0002	8.8	268	12	0005	7.7	235	27	0050	8.3	253	12	0053	7.8	238				
Th	0703	0.2	6	F	0713	-1.0	-30	Sa	0655	0.5	15	Su	0804	-0.6	-18	Tu	0732	0.4	12				
	1245	6.9	210		1245	7.5	229		1241	6.9	210		1345	7.4	226		1330	7.4	226				
	1837	0.7	21		1907	0.0	0		1838	1.1	34		2014	0.3	9		1942	0.9	27				
13	0034	7.6	232	28	0055	8.4	256	13	0037	7.7	235	28	0154	7.9	241	13	0138	7.8	238				
F	0718	0.4	12	Sa	0812	-0.6	-18	Su	0718	0.6	18	M	0902	-0.3	-9	W	0812	0.4	12				
	1306	6.8	207		1344	7.3	223		1313	7.0	213		1449	7.3	223		1412	7.5	229				
	1903	0.9	27		2012	0.3	9		1916	1.1	34		2118	0.5	15		2030	0.9	27				
14	0106	7.5	229	29	0154	8.0	244	14	0118	7.7	235	29	0305	7.6	232	14	0225	7.7	235				
Sa	0740	0.6	18	Su	0916	-0.2	-6	M	0751	0.7	21	Tu	1001	0.0	0	Th	0854	0.4	12				
	1339	6.8	207		1457	7.0	213		1354	7.0	213		1557	7.3	223		1459	7.7	235				
	1940	1.1	34		2128	0.7	21		1959	1.2	37		2224	0.6	18		2121	0.8	24				
15	0145	7.5	229	30	0307	7.5	229	15	0201	7.6	232	30	0419	7.3	223	15	0316	7.5	229				
Su	0815	0.8	24	M	1024	0.1	3	Tu	0835	0.8	24	W	1058	0.3	9	F	0944	0.5	15				
	1420	6.7	204		1616	6.9	210		1436	7.1	216		1700	7.3	223		1550	7.8	238				
	2024	1.3	40		2245	0.9	27		2051	1.3	40		2327	0.7	21		2218	0.8	24				
												31	0527	7.1	216								
												Th	1156	0.5	15								
													1800	7.4	226								

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

AUGUST

SEPTEMBER

Time Height				Time Height				Time Height				Time Height				Time Height				
Day		Day		Day		Day		Day		Day		Day		Day		Day		Day		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1 0049	0.8	24	16 0450	6.8	207	1 0157	1.3	40	16 0157	0.5	15	1 0250	1.2	37	16 0336	0.0	0			
Su 0646	6.5	198	M 1106	0.7	21	W 0757	6.4	195	Th 0739	6.6	201	Sa 0848	7.0	213	Su 0932	7.8	238			
1259	1.2	37	1719	7.9	241	1357	1.8	55	1405	1.1	34	1453	1.5	46	1556	0.0	0			
1908	7.3	223				2011	7.2	219	2000	7.7	235	2053	7.4	226	2156	8.0	244			
2 0141	0.8	24	17 0035	0.6	18	2 0247	1.1	34	17 0258	0.2	6	2 0332	0.9	27	17 0425	-0.2	-6			
M 0741	6.5	198	Tu 0559	6.6	201	Th 0847	6.6	201	F 0850	7.0	213	Su 0925	7.3	223	M 1018	8.0	244			
1350	1.3	40	1214	0.8	24	1447	1.6	49	1511	0.7	21	1535	1.0	30	1644	-0.3	-9			
2000	7.3	223	1825	7.9	241	2055	7.3	223	2109	7.9	241	2125	7.7	235	2244	8.1	247			
3 0233	0.7	21	18 0200	0.4	12	3 0332	0.9	27	18 0354	-0.1	-3	3 0406	0.6	18	18 0507	-0.2	-6			
Tu 0832	6.6	201	W 0717	6.6	201	F 0930	6.8	207	Sa 0945	7.4	226	M 0948	7.7	235	Tu 1100	8.2	250			
1437	1.3	40	1344	0.9	27	1530	1.4	43	1608	0.2	6	1612	0.6	18	1730	-0.4	-12			
2046	7.4	226	1939	7.9	241	2136	7.5	229	2204	8.1	247	2156	8.0	244	2324	8.0	244			
4 0322	0.6	18	19 0307	0.0	0	4 0412	0.7	21	19 0444	-0.4	-12	4 0438	0.2	6	19 0549	-0.1	-3			
W 0919	6.7	204	Th 0842	6.8	207	Sa 1010	7.1	216	Su 1036	7.7	235	Tu 1017	8.0	244	W 1139	8.2	250			
1523	1.3	40	1508	0.6	18	1607	1.2	37	1700	-0.1	-3	1648	0.1	3	1812	-0.4	-12			
2130	7.5	229	2055	8.1	247	2204	7.7	235	2255	8.2	250	2233	8.2	250						
5 0405	0.5	15	20 0407	-0.3	-9	5 0447	0.5	15	20 0532	-0.5	-15	5 0507	0.0	0	20 0002	7.8	238			
Th 1004	6.8	207	F 0948	7.1	216	Su 1037	7.3	223	M 1121	8.0	244	W 1052	8.4	256	Th 0625	0.1	3			
1603	1.3	40	1612	0.3	9	1641	0.9	27	1748	-0.3	-9	1725	-0.2	-6	1211	8.1	247			
2207	7.6	232	2202	8.2	250	2226	7.9	241	2342	8.2	250	2311	8.3	253	1851	-0.2	-6			
6 0445	0.4	12	21 0500	-0.6	-18	6 0518	0.3	9	21 0614	-0.4	-12	6 0539	-0.2	-6	21 0039	7.5	229			
F 1042	6.9	210	Sa 1045	7.4	226	M 1059	7.6	232	Tu 1204	8.1	247	Th 1129	8.6	262	F 0657	0.4	12			
1638	1.2	37	1708	0.1	3	1713	0.6	18	1833	-0.3	-9	1806	-0.4	-12	1241	7.9	241			
2236	7.6	232	2300	8.3	253	2255	8.1	247				2353	8.2	250	1925	0.2	6			
7 0521	0.4	12	22 0549	-0.7	-21	7 0545	0.1	3	22 0623	8.0	244	7 0616	-0.3	-9	22 0107	7.2	219			
Sa 1113	7.0	213	Su 1137	7.7	235	Tu 1124	7.8	238	W 0655	-0.2	-6	F 1212	8.8	268	Sa 0718	0.7	21			
1706	1.1	34	1801	-0.1	-3	1749	0.3	9	1244	8.0	244	1850	-0.4	-12	1306	7.7	235			
2252	7.7	235	2351	8.3	253	2333	8.2	250	1916	-0.2	-6			1956	0.5	15				
8 0552	0.3	9	23 0638	-0.7	-21	8 0612	-0.1	-3	23 0103	7.7	235	8 0038	8.1	247	23 0135	7.0	213			
Su 1133	7.2	219	M 1224	7.8	238	W 1159	8.1	247	Th 0732	0.1	3	Sa 0657	-0.2	-6	Su 0730	1.0	30			
1733	0.9	27	1852	-0.2	-6	1826	0.1	3	1318	7.9	241	1257	8.7	265	1335	7.5	229			
2320	7.9	241							1959	0.1	3	1938	-0.3	-9	2020	0.9	27			
9 0615	0.3	9	24 0041	8.1	247	9 0013	8.2	250	24 0141	7.4	226	9 0126	7.7	235	24 0207	6.8	207			
M 1154	7.4	226	Tu 0724	-0.5	-15	Th 0645	-0.1	-3	F 0804	0.5	15	Su 0743	0.1	3	M 0759	1.3	40			
1805	0.8	24	1311	7.8	238	1237	8.3	253	1354	7.7	235	1345	8.5	259	1409	7.3	223			
2353	8.0	244	1942	-0.1	-3	1908	0.0	0	2039	0.5	15	2031	0.1	3	2048	1.3	40			
10 0638	0.2	6	25 0129	7.9	241	10 0057	8.1	247	25 0217	7.0	213	10 0219	7.3	223	25 0246	6.6	201			
Tu 1224	7.6	232	W 0806	-0.2	-6	F 0721	-0.1	-3	Sa 0831	0.9	27	M 0835	0.6	18	Tu 0841	1.6	49			
1842	0.6	18	1356	7.8	238	1321	8.4	256	1427	7.4	226	1439	8.2	250	1452	7.1	216			
			2030	0.1	3	1954	0.0	0	2121	0.9	27	2144	0.5	15	2129	1.6	49			
11 0034	8.0	244	26 0217	7.5	229	11 0143	7.8	238	26 0257	6.7	204	11 0318	6.9	210	26 0336	6.4	195			
W 0709	0.1	3	Th 0851	0.2	6	Sa 0803	0.0	0	Su 0854	1.2	37	Tu 0937	1.0	30	W 0930	1.9	58			
1303	7.8	238	1443	7.6	232	1407	8.4	256	1505	7.2	219	1539	7.7	235	1542	6.9	210			
1924	0.5	15	2120	0.4	12	2042	0.2	6	2208	1.3	40	2319	0.8	24	2227	1.8	55			
12 0116	8.0	244	27 0305	7.1	216	12 0233	7.4	226	27 0345	6.4	195	12 0435	6.6	201	27 0429	6.4	195			
Th 0746	0.1	3	F 0934	0.6	18	Su 0852	0.3	9	M 0926	1.6	49	W 1112	1.4	43	Th 1030	2.1	64			
1346	8.0	244	1529	7.4	226	1457	8.2	250	1549	7.0	213	1659	7.4	226	1638	6.9	210			
2010	0.4	12	2211	0.7	21	2142	0.5	15	2307	1.6	49			2351	1.8	55				
13 0203	7.8	238	28 0357	6.7	204	13 0331	7.0	213	28 0448	6.2	189	13 0038	0.8	24	28 0545	6.5	198			
F 0828	0.1	3	Sa 1019	1.0	30	M 0945	0.7	21	Tu 1019	1.9	58	Th 0626	6.6	201	F 1133	2.1	64			
1431	8.1	247	1624	7.2	219	1555	7.9	241	1644	6.8	207	1254	1.3	40	1745	6.9	210			
2100	0.4	12	2307	1.0	30	2304	0.7	21				1852	7.3	223						
14 0254	7.5	229	29 0457	6.4	195	14 0435	6.6	201	29 0012	1.7	52	14 0146	0.6	18	29 0102	1.7	52			
Sa 0916	0.3	9	Su 1107	1.4	43	Tu 1047	1.1	34	W 0608	6.2	189	F 0741	6.9	210	Sa 0656	6.8	207			
1523	8.0	244	1720	7.0	213	1701	7.7	235	1122	2.1	64	1405	0.9	27	1259	1.8	55			
2156	0.5	15							1806	6.8	207	2008	7.6	232	1851	7.1	216			
15 0350	7.2	219	30 0006	1.2	37	15 0043	0.8	24	30 0110	1.7	52	15 0243	0.3	9	30 0155	1.3	40			
Su 1008	0.5	15	M 0558	6.3	192	W 0558	6.4	195	Th 0713	6.4	195	Sa 0840	7.4	226	Su 0745	7.1	216			
1619	8.0	244	1202	1.6	49	1232	1.3	40	1257	2.1	64	1506	0.5	15	1408	1.3	40			
2304	0.6	18	1821	7.0	213	1823	7.5	229	1923	6.9	210	2106	7.9	241	1950	7.3	223			
			31 0102	1.3	40				31 0205	1.5	46									
			Tu 0659	6.3	192				F 0805	6.6	201									
			1302	1.8	55				1402	1.9	58									
			1920	7.0	213				2014	7.2	219									

Time meridian 75° W. 0000 is midnight. 1200 is noon.

Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER												NOVEMBER												DECEMBER											
Time Height				Time Height				Time Height				Time Height				Time Height				Time Height				Time Height											
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm						
1	0237	0.9	27		16	0359	0.0	0		1	0311	0.0	0		16	0454	0.4	12		1	0333	-0.2	-6		16	0505	0.7	21							
M	0822	7.6	232		Tu	0956	8.1	247		Th	0906	8.6	262		F	1049	7.8	238		Sa	0932	8.6	262		Su	1103	7.5	229							
	1455	0.8	24			1625	-0.4	-12			1602	-0.6	-18			1726	-0.3	-9			1644	-1.0	-30			1741	-0.1	-3							
	2037	7.6	232			2223	7.7	235			2138	7.7	235			2321	7.0	213			2215	7.4	226			2336	6.8	207							
2	0315	0.5	15		17	0441	0.0	0		2	0357	-0.2	-6		17	0531	0.6	18		2	0433	-0.3	-9		17	0533	0.8	24							
Tu	0901	8.0	244		W	1037	8.2	250		F	0952	8.9	271		Sa	1121	7.7	235		Su	1025	8.7	265		M	1126	7.4	226							
	1541	0.2	6			1710	-0.5	-15			1653	-0.9	-27			1803	-0.1	-3			1739	-1.1	-34			1813	0.0	0							
	2121	7.9	241			2304	7.6	232			2229	7.8	238			2354	6.9	210			2310	7.4	226												
3	0351	0.1	3		18	0519	0.2	6		3	0446	-0.3	-9		18	0556	0.8	24		3	0532	-0.3	-9		18	0605	6.8	207							
W	0940	8.4	256		Th	1114	8.1	247		Sa	1041	9.0	274		Su	1142	7.6	232		M	1119	8.6	262		Tu	0554	0.8	24							
	1623	-0.3	-9			1747	-0.4	-12			1742	-1.0	-30			1835	0.1	3			1833	-1.1	-34			1143	7.4	226							
	2204	8.1	247			2341	7.4	226			2319	7.8	238													1839	0.1	3							
4	0431	-0.2	-6		19	0556	0.4	12		4	0535	-0.3	-9		19	0621	6.8	207		4	0605	7.4	226		19	0620	6.8	207							
Tu	1020	8.8	268		F	1144	8.0	244		Su	1130	8.9	271		M	0606	0.9	27		Tu	0631	-0.2	-6		W	0615	0.8	24							
	1706	-0.6	-18			1826	-0.1	-3			1835	-0.9	-27			1201	7.5	229			1213	8.4	256			1206	7.5	229							
	2249	8.1	247												1901	0.4	12			1929	-1.0	-30			1853	0.2	6								
5	0509	-0.3	-9		20	0613	7.2	219		5	0610	7.6	232		20	0641	6.8	207		5	0104	7.4	226		20	0041	6.9	210							
F	1104	9.0	274		Sa	0621	0.7	21		M	0629	-0.1	-3		Tu	0628	1.0	30			W	0735	-0.1	-3		Th	0647	0.7	21						
	1751	-0.8	-24			1208	7.8	238			1221	8.7	265			1227	7.5	229			1313	8.0	244			1239	7.5	229							
	2334	8.1	247			1900	0.2	6			1935	-0.7	-21			1914	0.5	15			2027	-0.7	-21			1916	0.2	6							
6	0553	-0.3	-9		21	0642	7.0	213		6	0106	7.4	226		21	0106	6.8	207		6	0207	7.3	223		21	0113	7.1	216							
Sa	1148	9.0	274		Su	0633	0.9	27		Tu	0727	0.2	6		W	0703	1.1	34		Th	0841	0.1	3		F	0724	0.7	21							
	1839	-0.7	-21			1228	7.6	232			1317	8.3	253			1303	7.4	226			1418	7.6	232			1319	7.4	226							
						1922	0.5	15			2039	-0.3	-9			1940	0.7	21			2126	-0.4	-12			1951	0.2	6							
7	0622	7.9	241		22	0103	6.9	210		7	0209	7.2	219		22	0140	6.9	210		7	0316	7.2	219		22	0152	7.2	219							
Su	0639	-0.1	-3		M	0652	1.1	34		W	0841	0.6	18		Th	0745	1.2	37		F	0910	0.3	9		23	0807	0.6	18							
	1236	8.8	268			1256	7.5	229			1420	7.8	238			1344	7.4	226			1537	7.2	219			1404	7.3	223							
	1932	-0.5	-15			1938	0.8	24			2145	0.0	0			2017	0.7	21			2227	-0.1	-3			2031	0.2	6							
8	0114	7.6	232		23	0132	6.8	207		8	0326	7.0	213		23	0222	6.9	210		8	0424	7.1	216		23	0234	7.4	226							
M	0730	0.3	9		Tu	0727	1.3	40		Th	1003	0.8	24		F	0831	1.2	37		Sa	1056	0.4	12		Su	0857	0.6	18							
	1327	8.5	259			1332	7.4	226			1542	7.3	223			1431	7.2	219			1653	6.9	210			1452	7.2	219							
	2036	0.0	0			2007	1.0	30			2253	0.3	9			2103	0.8	24			2325	0.2	6			2116	0.2	6							
9	0209	7.2	219		24	0209	6.7	204		9	0451	7.0	213		24	0308	7.0	213		9	0528	7.1	216		24	0324	7.4	226							
Tu	0828	0.7	21		W	0809	1.5	46		F	1121	0.8	24		Sa	0923	1.2	37		Su	1201	0.3	9		M	0948	0.5	15							
	1425	8.0	244			1414	7.3	223			1719	7.1	216			1920	7.1	216			1801	6.7	204			1545	6.9	210							
	2153	0.4	12			2048	1.3	40			2358	0.4	12			2149	0.8	24								2206	0.3	9							
10	0318	6.9	210		25	0252	6.7	204		10	0602	7.1	216		25	0358	7.1	216		10	0024	0.4	12		25	0415	7.5	229							
W	0953	1.2	37		Th	0857	1.7	52		Sa	1227	0.6	18		Su	1018	1.2	37		M	0628	7.2	219		Tu	1046	0.5	15							
	1534	7.5	229			1502	7.1	216			1831	7.1	216			1617	6.9	210			1301	0.2	6			1640	6.7	204							
	2312	0.6	18			2137	1.4	43								2243	0.8	24			1901	6.6	201			2259	0.3	9							
11	0459	6.7	204		26	0342	6.7	204		11	0058	0.4	12		26	0451	7.3	223		11	0120	0.5	15		26	0511	7.6	232							
Th	1132	1.3	40		F	0953	1.8	55		Su	0702	7.4	226		M	1119	1.0	30		Tu	0724	7.3	223		W	1153	0.4	12							
	1724	7.2	219			1555	7.0	213			1329	0.3	9			1716	6.9	210			1357	0.1	3			1743	6.5	198							
						2230	1.5	46			1931	7.1	216			2339	0.7	21			1956	6.6	201			2359	0.4	12							
12	0623	0.6	18		27	0440	6.8	207		12	0153	0.3	9		27	0549	7.5	229		12	0213	0.5	15		27	0611	7.7	235							
F	0623	6.9	210		Sa	1056	1.7	52		M	0757	7.6	232		Tu	1227	0.6	18		W	0816	7.4	226		Th	1313	0.2	6							
	1249	1.0	30			1654	6.9	210			1426	0.0	0			1816	6.8	207			1449	-0.1	-3			1848	6.5	198							
	1851	7.3	223			2329	1.4	43			2026	7.2	219								2047	6.6	201												
13	0126	0.5	15		28	0538	7.0	213		13	0245	0.2	6		28	0036	0.5	15		13	0301	0.5	15		28	0102	0.3	9							
Sa	0726	7.3	223		Su	1203	1.5	46		Tu	0845	7.8	238		W	0645	7.8	238		Th	0903	7.5	229		F	0712	7.8	238							
	1351	0.6	18			1756	7.0	213			1515	-0.2	-6			1341	0.2	6			1538	-0.2	-6			1435	-0.2	-6							
	1955	7.5	229								2115	7.2	219			1918	6.9	210			2134	6.7	204			1958	6.6	201							
14	0222	0.3	9		29	0732	1.1	34		14	0331	0.2	6		29	0134	0.3	9		14	0347	0.6	18		29	0213	0.2	6							
Su	0821	7.6	232		M	0633	7.4	226		W	0930	7.9	241		Th	0741	8.1	247		F	0948	7.5	229		Sa	0816	8.0	244							
	1447	0.2	6			1312	1.0	30			1602	-0.4	-12			1447	-0.3	-9			1623	-0.2	-6			1540	-0.6	-18							
	2050	7.6	232			1857	7.1	216			2202	7.2	219			2019	7.1	216			2220	6.7	204			2106	6.8	207							
15	0312	0.1	3		30	0129	0.8	24		15	0415	0.3	9		30	0237	0.0	0		15	0426	0.6	18		30	0330	0.0	0							
M	0911	7.9	241		Tu	0729	7.8	238		Th	1012	7.9	241		F	0837	8.4	256		Sa	1028	7.5	229		Su	0919	8.2	250							
	1538	-0.2	-6			1416	0.5	15			1645	-0.4	-12			1546	-0.7	-21			1703	-0.2	-6			1640	-0.9	-27							
	2138	7.7	235			1957	7.3	223			2240	7.1	216			2118	7.2	219			2300	6.7	204			2212	7.0	213							

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JANUARY

Time Height			Time Height		
Day	h m	ft cm	Day	h m	ft cm
1	0440	0.2 6	16	0546	0.4 12
M	1059	4.7 143	Tu	1207	4.2 128
	1717	-0.2 -6		1809	0.1 3
	2341	4.3 131			
2	0525	0.3 9	17	0039	4.2 128
Tu	1149	4.5 137	W	0636	0.7 21
	1757	0.0 0		1249	3.9 119
				1855	0.4 1
3	0031	4.4 134	18	0122	4.1 125
W	0623	0.4 12	Th	0737	0.9 27
	1241	4.3 131		1332	3.6 110
	1851	0.1 3		1952	0.6 18
4	0122	4.5 137	19	0209	4.0 122
Th	0743	0.5 15	F	0845	1.0 30
	1335	4.1 125		1418	3.4 104
	1959	0.1 3		2051	0.7 21
5	0220	4.7 143	20	0259	4.0 122
F	0901	0.4 12	Sa	0945	0.9 27
	1437	3.9 119		1517	3.3 101
	2111	0.1 3		2146	0.8 24
6	0322	4.8 146	21	0356	4.0 122
Sa	1009	0.2 6	Su	1037	0.8 24
	1548	3.8 116		1623	3.2 98
	2213	0.0 0		2238	0.7 21
7	0430	5.0 152	22	0454	4.2 128
Su	1108	0.0 0	M	1129	0.5 15
	1702	3.8 116		1724	3.3 101
	2312	-0.1 -3		2327	0.6 18
8	0534	5.2 158	23	0547	4.4 134
M	1206	-0.3 -9	Tu	1216	0.3 9
	1806	4.0 122		1816	3.5 107
9	0008	-0.3 -9	24	0016	0.4 12
	0632	5.4 165	W	0632	4.7 143
	1300	-0.5 -15		1303	0.0 0
	1902	4.2 128		1901	3.8 116
10	0104	-0.4 -12	25	0102	0.2 6
	0725	5.5 168	Th	0715	4.9 149
	1351	-0.7 -21		1348	-0.2 -6
	1954	4.4 134		1944	4.0 122
11	0157	-0.5 -15	26	0147	0.0 0
	0813	5.5 168	F	0753	5.1 155
	1439	-0.8 -24		1427	-0.4 -12
	2044	4.5 137		2022	4.2 128
12	0247	-0.5 -15	27	0229	-0.2 -6
	0902	5.4 165	Sa	0833	5.1 155
	1523	-0.8 -24		1506	-0.5 -15
	2134	4.5 137		2101	4.4 134
13	0333	-0.4 -12	28	0310	-0.3 -9
	0949	5.2 158	Su	0913	5.1 155
	1607	-0.6 -18		1541	-0.6 -18
	2222	4.5 137		2143	4.6 140
14	0418	-0.2 -6	29	0350	-0.4 -12
	1035	4.9 149	M	0955	5.0 152
	1646	-0.4 -12		1616	-0.6 -18
	2311	4.4 134		2229	4.7 143
15	0501	0.1 3	30	0431	-0.3 -9
	1122	4.6 140	Tu	1043	4.8 146
	1727	-0.2 -6		1653	-0.5 -15
	2356	4.3 131		2317	4.8 146
16			31	0517	-0.1 -3
			W	1133	4.6 140
				1733	-0.3 -9

FEBRUARY

Time Height				Time Height			
Day	h	m	ft cm	Day	h	m	ft cm
1	0007	4.8	146	16	0032	4.2	128
Th	0612	0.1	3	F	0637	0.9	27
	1225	4.3	131		1242	3.6	110
	1821	0.0	0		1823	0.8	24
2	0102	4.8	146	17	0114	4.0	122
F	0724	0.3	9	Sa	0745	1.1	34
	1321	4.0	122		1326	3.4	104
	1931	0.2	6		1926	1.0	30
3	0200	4.7	143	18	0158	4.0	122
Sa	0844	0.4	12	Su	0859	1.1	34
	1424	3.7	113		1421	3.2	98
	2050	0.3	9		2100	1.1	34
4	0306	4.7	143	19	0259	3.9	119
Su	0953	0.3	9	M	1001	0.9	27
	1540	3.6	110		1536	3.2	98
	2201	0.3	9		2203	1.0	30
5	0417	4.3	146	20	0408	4.1	125
M	1055	0.1	3	Tu	1055	0.7	21
	1654	3.7	113		1647	3.3	101
	2302	0.1	3		2257	0.8	24
6	0524	4.9	149	21	0510	4.3	131
Tu	1151	-0.1	-3	W	1145	0.4	12
	1758	4.0	122		1745	3.6	110
					2347	0.5	15
7	0000	-0.1	-3	22	0603	4.6	140
W	0622	5.1	155	Th	1231	0.1	3
	1243	-0.3	-9		1832	4.0	122
	1852	4.3	131				
8	0053	-0.2	-6	23	0036	0.2	6
Th	0712	5.2	158	F	0648	4.9	149
	1333	-0.5	-15		1313	-0.2	-6
	1941	4.5	137		1913	4.4	134
9	0144	-0.4	-12	24	0123	-0.1	-3
F	0759	5.3	162	Sa	0728	5.1	155
	1419	-0.6	-18		1355	-0.4	-12
	2025	4.7	143		1953	4.7	143
0	0230	-0.4	-12	25	0209	-0.4	-12
Sa	0842	5.2	158	Su	0809	5.2	158
	1500	-0.6	-18		1436	-0.6	-18
	2108	4.7	143		2034	5.0	152
	0313	-0.4	-12	26	0251	-0.6	-18
	0925	5.0	152	M	0851	5.2	158
	1539	-0.5	-15		1513	-0.7	-21
	2150	4.7	143		2116	5.2	158
	0355	-0.3	-9	27	0334	-0.7	-21
	1006	4.7	143	Tu	0936	5.1	155
	1614	-0.4	-12		1550	-0.7	-21
	2232	4.6	140		2200	5.3	162
	0432	0.0	0	28	0419	-0.6	-18
	1048	4.4	134	W	1024	4.9	149
	1648	-0.1	-3		1629	-0.5	-15
	2314	4.5	137		2253	5.3	162
0509	0.3	9					
1125	4.1	125					
1719	0.2	6					
2352	4.3	131					
0548	0.6	18					
1205	3.9	119					
1751	0.5	15					

MARCH

Time				Height				Time				Height			
Day								Day							
		h	m	ft	cm			h	m	ft	cm			h	m
1	0504	-0.4	-12			16	0512	0.5	15						
Th	1119	4.6	140			F	1125	3.8	116						
	1712	-0.3	-9				1659	0.7	21						
	2348	5.2	158				2338	4.4	134						
2	0559	0.0	0			17	0548	0.8	24						
F	1213	4.3	131			Sa	1205	3.6	110						
	1802	0.1	3				1722	0.9	27						
3	0044	5.0	152			18	0018	4.2	128						
Sa	0711	0.3	9			Su	0642	1.1	34						
	1315	4.0	122				1247	3.4	104						
	1915	0.4	12				1759	1.2	37						
4	0146	4.8	146			19	0105	4.1	125						
Su	0828	0.4	12			M	0811	1.2	37						
	1421	3.8	116				1343	3.3	101						
	2040	0.6	18				1920	1.4	43						
5	0253	4.7	143			20	0203	4.1	125						
M	0940	0.4	12			Tu	0921	1.1	34						
	1533	3.7	113				1452	3.4	104						
	2151	0.5	15				2125	1.3	40						
6	0404	4.7	143			21	0312	4.1	125						
Tu	1040	0.2	6			W	1017	0.8	24						
	1644	3.9	119				1606	3.6	110						
	2254	0.3	9				2228	1.0	30						
7	0511	4.8	146			22	0425	4.3	131						
W	1134	0.0	0			Th	1106	0.5	15						
	1747	4.2	128				1706	4.0	122						
	2348	4.1	3				2318	0.6	18						
8	0608	4.9	149			23	0524	4.6	140						
Th	1223	-0.2	-6			F	1153	0.2	6						
	1836	4.5	137				1757	4.4	134						
9	0040	-0.1	-3			24	0008	0.2	6						
F	0656	5.0	152			Sa	0614	4.9	149						
	1309	-0.3	-9				1235	-0.1	-3						
	1921	4.8	146				1839	4.9	149						
10	0127	-0.2	-6			25	0057	-0.2	-6						
M	0737	5.1	155			Su	0701	5.1	155						
	1351	-0.4	-12				1320	-0.4	-12						
	2000	5.0	152				1921	5.3	162						
11	0212	-0.3	-9			26	0145	-0.5	-15						
Th	0819	5.0	152			M	0743	5.2	158						
	1431	-0.4	-12				1402	-0.6	-18						
	2039	5.0	152				2003	5.6	171						
12	0251	-0.3	-9			27	0231	-0.7	-21						
	0857	4.8	146			Tu	0828	5.2	158						
	1507	-0.3	-9				1444	-0.6	-18						
	2118	5.0	152				2049	5.8	177						
13	0329	-0.2	-6			28	0317	-0.8	-24						
	0934	4.6	140			W	0916	5.1	155						
	1541	-0.1	-3				1526	-0.6	-18						
	2154	4.9	149				2138	5.8	177						
14	0405	0.0	0			29	0403	-0.7	-21						
	1011	4.4	134			Th	1008	4.8	146						
	1611	0.1	3				1609	-0.4	-12						
	2227	4.7	143				2232	5.7	174						
15	0439	0.2	6			30	0453	-0.4	-12						
	1048	4.1	125			F	1107	4.6	140						
	1637	0.4	12				1656	-0.1	-3						
	2304	4.5	137				2332	5.4	165						
						31	0548	-0.1	-3						
						Sa	1209	4.3	131						
							1752	0.3	9						

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

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Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JULY

AUGUST

SEPTEMBER

												SEPTEMBER																	
Time Height				Time Height				Time Height				Time Height				Time Height				Time Height									
Day		h m	ft	cm	Day		h m	ft	cm	Day		h m	ft	cm	Day		h m	ft	cm	Day		h m	ft	cm	Day		h m	ft	cm
	1	0251	4.1	125		16	0153	4.4	134		1	0404	3.7	113		16	0415	4.2	128		1	0531	4.1	125		16	0608	5.0	152
Su	0918	0.8	24		M	0817	0.6	18		W	1020	1.3	40		Th	1027	0.7	21		Sa	1131	1.1	34		16	1212	0.4	12	
	1531	4.8	146			1441	5.3	162			1636	4.8	146			1646	5.5	168			1745	5.0	152			1827	5.5	168	
	2204	1.1	34			2135	0.9	27			2313	1.1	34			2323	0.5	15											
2	0347	3.9	119		17	0301	4.2	128		2	0508	3.8	116		17	0524	4.4	134		2	0014	0.7	21		17	0043	0.0	0	
M	1006	0.9	27		Tu	0930	0.6	18		Th	1111	1.2	37		F	1129	0.5	15		Su	0617	4.4	134		M	0655	5.3	16	
	1624	4.8	146			1548	5.5	168			1731	5.0	152			1750	5.7	174			1219	0.9	27			1302	0.2	6	
	2255	1.0	30			2236	0.6	18													1830	5.3	162			1912	5.6	171	
3	0445	3.9	119		18	0417	4.2	128		3	0001	0.9	27		18	0016	0.2	6		3	0056	0.4	12		18	0127	-0.1	-3	
Tu	1054	0.9	27		W	1033	0.5	15		F	0603	4.0	122		Sa	0624	4.8	146		M	0659	4.8	146		18	0127	-0.1	-3	
	1715	4.9	149			1657	5.7	174			1200	1.1	34			1224	0.3	9			1304	0.6	18		Tu	0739	5.5	168	
	2342	0.9	27			2335	0.4	12			1819	5.2	158			1843	5.9	180			1910	5.5	168			1954	5.5	168	
4	0542	3.9	119		19	0531	4.3	131		4	0046	0.6	18		19	0107	0.0	0		4	0136	0.2	6		19	0208	-0.1	-3	
W	1140	0.9	27		Th	1134	0.4	12		Sa	0648	4.2	128		Su	0714	5.1	155		Tu	0736	5.1	155		W	0818	5.6	171	
	1801	5.1	155			1758	5.9	180			1246	0.9	27			1317	0.2	6			1349	0.3	9			1431	0.1	3	
											1901	5.4	165			1933	5.9	180			1949	5.6	171			2035	5.3	162	
5	0030	0.7	21		20	0032	0.1	3		5	0131	0.4	12		20	0154	-0.2	-6		5	0215	0.0	0		20	0248	0.0	0	
Th	0630	4.0	122		F	0632	4.6	140		Su	0731	4.5	137		M	0801	5.3	162		W	0813	5.4	165		Th	0858	5.5	168	
	1227	0.9	27			1234	0.2	6			1331	0.7	21			1406	0.1	3			1431	0.1	3			1513	0.2	6	
	1845	5.2	158			1853	6.1	186			1938	5.5	168			2018	5.8	177			2026	5.6	171			2113	5.1	155	
6	0115	0.5	15		21	0125	-0.1	-3		6	0211	0.2	6		21	0237	-0.2	-6		6	0251	-0.1	-3		21	0322	0.2	6	
F	0715	4.1	125		Sa	0728	4.8	146		M	0808	4.7	143		21	0847	5.4	165		Th	0851	5.6	171		F	0936	5.4	165	
	1312	0.8	24			1330	0.1	3			1414	0.6	18			1452	0.1	3			1512	0.0	0			1550	0.4	12	
	1925	5.4	165			1946	6.1	186			2015	5.6	171			2101	5.7	174			2107	5.5	168			2152	4.8	146	
7	0159	0.3	9		22	0215	-0.3	-9		7	0249	0.1	3		22	0319	-0.2	-6		7	0326	-0.1	-3		22	0357	0.4	12	
Sa	0757	4.2	128		Su	0820	5.0	152		Tu	0846	4.9	149		W	0929	5.4	165		F	0933	5.7	174		Sa	1016	5.2	158	
	1354	0.8	24			1423	0.0	0			1452	0.4	12			1537	0.2	6			1554	0.1	3			1627	0.6	18	
	2002	5.4	165			2035	6.0	183			2053	5.5	168			2144	5.4	165			2150	5.2	158			2232	4.5	137	
8	0240	0.2	6		23	0302	-0.4	-12		8	0323	0.0	0		23	0355	0.0	0		8	0403	0.0	0		23	0427	0.7	21	
Su	0839	4.3	131		M	0911	5.1	155		W	0924	5.0	152		Th	1015	5.3	162		Sa	1021	5.7	174		Su	1056	5.0	152	
	1435	0.7	21			1512	0.1	3			1533	0.4	12			1618	0.4	12			1638	0.2	6			1703	0.9	27	
	2039	5.4	165			2126	5.8	177			2132	5.4	165			2229	5.1	155			2240	5.0	152			2314	4.2	128	
9	0318	0.2	6		24	0345	-0.3	-9		9	0357	0.0	0		24	0432	0.3	9		9	0439	0.2	6		24	0451	1.0	30	
M	0917	4.4	134		Tu	1003	5.2	158		Th	1006	5.2	158		F	1058	5.2	158		Su	1114	5.7	174		M	1136	4.8	146	
	1514	0.7	21			1558	0.2	6			1611	0.4	12			1659	0.7	21			1728	0.5	15			1745	1.2	37	
	2116	5.3	162			2215	5.6	171			2214	5.2	158			2312	4.7	143			2336	4.7	143			2359	3.9	119	
10	0353	0.2	6		25	0429	-0.2	-6		10	0428	0.1	3		25	0507	0.6	18		10	0525	0.5	15		25	0517	1.3	40	
Tu	0958	4.5	137		W	1051	5.2	158		F	1051	5.3	162		Sa	1141	5.0	152		M	1213	5.5	168		Tu	1221	4.6	140	
	1549	0.7	21			1645	0.5	15			1651	0.5	15			1741	1.1	34			1834	0.8	24			1844	1.5	46	
	2155	5.2	158			2303	5.2	158			2258	5.0	152			2352	4.4	134											
11	0425	0.2	6		26	0509	0.1	3		11	0503	0.2	6		26	0540	0.9	27		11	0039	4.4	134		26	0050	3.7	113	
W	1039	4.6	140		Th	1139	5.1	155		Sa	1137	5.3	162		Su	1226	4.8	146		Tu	0625	0.8	24		W	0552	1.6	49	
	1624	0.7	21			1731	0.8	24			1739	0.7	21			1831	1.4	43			1314	5.4	165			1308	4.5	137	
	2235	5.1	155			2349	4.9	149			2349	4.8	146								1952	0.9	27			2002	1.6	49	
12	0456	0.3	9		27	0552	0.4	12		12	0544	0.4	12		27	0037	4.1	125		12	0147	4.7	128		27	0145	3.6	110	
Th	1122	4.7	143		F	1226	5.0	152		Su	1229	5.4	165		M	0620	1.3	40		W	0753	1.0	30		Th	0739	1.8	55	
	1704	0.8	24			1821	1.1	34			1842	0.9	27			1308	4.7	143			1418	5.3	162			1401	4.4	134	
	2320	4.9	149													1937	1.6	49			2107	0.9	27			2109	1.4	43	
13	0530	0.4	12		28	0034	4.5	137		13	0044	4.5	137		28	0124	3.9	119		13	0256	4.2	128		28	0247	3.7	113	
F	1205	4.9	149		Sa	0637	0.8	24		M	0637	0.7	21		Tu	0726	1.5	46		Th	0916	1.0	30		F	0914	1.7	52	
	1752	0.9	27			1311	4.9	149			1324	5.4	165			1355	4.6	140			1527	5.2	158			1506	4.5	137	
						1922	1.3	40			2004	1.0	30			2046	1.6	49			2210	0.7	21			2204	1.2	37	
14	0007	4.8	146		29	0119	4.2	128		14	0146	4.3	131		29	0220	3.7	113		14	0409	4.3	131		29	0353	3.9	119	
Sa	0610	0.5	15		Su	0731	1.0	30		Tu	0759	0.9	27		W	0845	1.6	49		F	1022	0.8	24		Sa	1012	1.4	43	
	1253	5.1	155			1354	4.8	146			1427	5.4	165			1452	4.5	137			1636	5.3	162			1609	4.6	140	
	1858	1.0	30			2026	1.5	46			2120	0.9	27			2148	1.5	46			2305	0.4	12			2252	0.9	27	
15	0057	4.6	140		30	0207	4.0	122		15	0256	4.1	125		30	0327	3.7	113		15	0514	4.6	140		30	0450	4.2	128	
Su	0706	0.6	18		M	0831	1.2	37		W	0921	0.9	27		Th	0950	1.6	49		Sa	1119	0.6	18		Su	1102	1.1	34	
	1343	5.2	158			1444	4.7	143			1538	5.4	165			1553	4.6	140			1736	5.4	165			1705	4.8	146	
	2022	1.0	30			2127	1.4	43			2225	0.7	21			2241	1.2	37			2356	0.2	6			2334	0.6	18	
					31	0302	3.8	116							31	0436	3.8	116											
					Tu	0927	1.3	40					</																

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

DECEMBER

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JANUARY

FEBRUARY

MARCH

										MARCH											
Time Height			Time Height			Time Height			Time Height			Time Height			Time Height			Time Height			
Day	h m	ft cm	Day	h m	ft cm	Day	h m	ft cm	Day	h m	ft cm	Day	h m	ft cm	Day	h m	ft cm	Day	h m	ft cm	
1	0413	0.2 6																			
M	1026	4.8 146	16	0508	0.2 6	1	0546	0.1 3	16	0559	0.7 21	1	0437	-0.4 -12	16	0439	0.4 12	12			
	1649	-0.2 -6		1114	4.3 131	Th	1151	4.4 134	F	1154	3.8 116	Th	1042	4.7 143	F	1036	4.0 122	4.0			
	2258	4.3 131		1735	0.0 0		1759	-0.2 -6		1802	0.6 18		1647	-0.4 -12		1637	0.6 18	18			
				2349	4.3 131								2306	5.3 162		2301	4.6 140	140			
2	0503	0.2 6	17	0554	0.5 15	2	0023	4.8 146	17	0030	4.2 128	2	0533	-0.1 -3	17	0518	0.7 21	21			
Tu	1116	4.6 140	W	1157	4.0 122	F	0653	0.3 9	Sa	0655	0.9 27	F	1137	4.4 134	Sa	1115	3.8 116	116			
	1733	-0.1 -3		1817	0.3 9		1249	4.1 125		1239	3.5 107		1738	0.0 0		1709	0.8 21	21			
	2349	4.4 134					1900	0.1 3		1855	0.9 27					2343	4.4 134	134			
3	0601	0.4 12	18	0034	4.2 128	3	0123	4.8 146	18	0121	4.1 125	3	0003	5.1 155	18	0607	0.9 27	27			
W	1209	4.4 134	Th	0649	0.7 21	Sa	0807	0.3 9	Su	0800	0.9 27	Sa	0636	0.2 6	Su	1202	3.6 110	110			
	1826	-0.1 -3		1239	3.8 116		1353	3.8 116		1335	3.3 101		1236	4.1 125		1751	1.1 34	34			
				1908	0.5 15		2011	0.2 6		2003	1.0 30		1843	0.3 9							
4	0046	4.6 140	19	0122	4.1 125	4	0229	4.8 146	19	0218	4.1 125	4	0105	4.9 149	19	0034	4.3 131	131			
Th	0712	0.4 12	F	0749	0.8 24	Su	0916	0.3 9	M	0904	0.9 27	Su	0751	0.4 12	M	0714	1.0 -30	-30			
	1307	4.2 128		1329	3.5 107		1505	3.7 113		1444	3.3 101		1343	3.9 119		1257	3.5 107	107			
	1929	0.0 0		2001	0.6 18		2118	0.2 6		2109	0.9 27		1957	0.5 15		1907	1.2 37	37			
5	0145	4.7 143	20	0212	4.1 125	5	0340	4.2 146	20	0324	4.2 128	5	0212	4.7 143	20	0133	4.2 128	128			
F	0824	0.4 12	Sa	0848	0.8 24	M	1020	0.1 3	Tu	1001	0.7 21	M	0901	0.4 12	Tu	0824	1.0 30	30			
	1410	4.0 122		1424	3.4 104		1617	3.8 116		1555	3.4 104		1454	3.8 116		1403	3.5 107	107			
	2032	0.0 0		2057	0.6 18		2220	0.0 0		2208	0.7 21		2108	0.5 15		2031	1.2 37	37			
6	0249	4.8 146	21	0311	4.2 128	6	0447	5.0 152	21	0427	4.5 137	6	0325	4.7 143	21	0237	4.3 131	131			
Sa	0930	0.2 6	Su	0943	0.7 21	Tu	1118	-0.1 -3	W	1054	0.4 12	Tu	1004	0.2 6	W	0924	0.8 24	24			
	1521	3.9 119		1529	3.3 101		1723	4.1 125		1659	3.7 113		1607	4.0 122		1516	3.7 113	113			
	2133	-0.1 -3		2148	0.6 18		2320	-0.1 -3		2302	0.5 15		2212	0.3 9		2137	0.9 27	27			
7	0356	5.0 152	22	0409	4.3 131	7	0545	5.2 158	22	0523	4.8 146	7	0435	4.8 146	22	0348	4.5 137	137			
Su	1031	-0.1 -3	M	1038	0.5 15	W	1213	-0.3 -9	Th	1145	0.1 3	W	1059	0.0 0	Th	1017	0.5 15	15			
	1630	4.0 122		1635	3.4 104		1816	4.4 134		1750	4.1 125		1710	4.3 131		1622	4.0 122	122			
	2233	-0.2 -6		2239	0.5 15					2354	0.2 6		2309	0.1 3		2233	0.6 18	18			
8	0459	5.3 162	23	0505	4.6 140	8	0015	-0.3 -9	23	0609	5.1 155	8	0531	5.0 152	23	0447	4.8 146	146			
M	1131	-0.3 -9	Tu	1128	0.3 9	Th	0635	5.3 162	F	1232	-0.2 -6	Th	1150	-0.1 -3	F	1107	0.1 3	3			
	1731	4.2 128		1728	3.6 110		1302	-0.5 -15		1833	4.5 137		1800	4.6 140		1715	4.5 137	137			
	2331	-0.4 -12		2329	0.3 9		1904	4.6 140								2327	0.2 6	6			
9	0557	5.5 168	24	0552	4.9 149	9	0109	-0.4 -12	24	0045	-0.1 -3	9	0003	0.0 0	24	0539	5.1 155	155			
Tu	1227	-0.5 -15	W	1216	0.0 0	F	0720	5.4 165	Sa	0654	5.3 162	F	0618	5.1 155	Sa	1153	-0.2 -6	-6			
	1827	4.4 134		1816	3.9 119		1348	-0.6 -18		1315	-0.5 -15		1237	-0.3 -9		1803	5.1 155	155			
							1946	4.8 146		1917	4.9 149		1845	4.9 149							
10	0027	-0.4 -12	25	0019	0.2 6	10	0156	-0.4 -12	25	0131	-0.4 -12	10	0050	-0.2 -6	25	0019	-0.2 -6	-6			
W	0648	5.7 174	Th	0637	5.1 155	Sa	0801	5.3 162	Su	0736	5.5 168	Sa	0659	5.1 155	Su	0627	5.3 162	162			
	1320	-0.7 -21		1305	-0.2 -6		1429	-0.6 -18		1359	-0.7 -21		1320	-0.3 -9		1240	-0.5 -15	-15			
	1917	4.5 137		1901	4.1 125		2027	4.9 149		1956	5.2 158		1923	5.1 155		1848	5.5 168	168			
11	0120	-0.5 -15	26	0107	0.0 0	11	0240	-0.4 -12	26	0217	-0.6 -18	11	0135	-0.3 -9	26	0109	-0.5 -15	-15			
Th	0735	5.7 174	F	0719	5.3 162	Su	0841	5.1 155	M	0819	5.5 168	Su	0739	5.1 155	M	0712	5.5 168	168			
	1409	-0.8 -24		1347	-0.4 -12		1506	-0.5 -15		1440	-0.8 -24		1359	-0.3 -9		1325	-0.6 -18	-18			
	2005	4.6 140		1942	4.4 134		2106	4.8 146		2040	5.4 165		1959	5.2 158		1932	5.8 177	177			
12	0122	-0.5 -15	27	0151	-0.2 -6	12	0320	-0.3 -9	27	0303	-0.7 -21	12	0217	-0.3 -9	27	0158	-0.7 -21	-21			
F	0821	5.5 168	Sa	0758	5.3 162	M	0920	4.9 149	Tu	0903	5.3 162	M	0813	5.0 152	Tu	0757	5.5 168	168			
	1454	-0.8 -24		1429	-0.6 -18		1543	-0.4 -12		1520	-0.8 -24		1435	-0.3 -9		1411	-0.7 -21	-21			
	2051	4.6 140		2021	4.6 140		2147	4.8 146		2126	5.5 168		2036	5.1 155		2016	6.0 183	183			
13	0259	-0.4 -12	28	0234	-0.3 -9	13	0357	-0.1 -3	28	0349	-0.6 -18	13	0254	-0.2 -6	28	0245	-0.8 -24	-24			
Sa	0906	5.3 162	Su	0840	5.3 162	Th	0957	4.6 140	W	0951	5.1 155	Tu	0850	4.8 146	W	0844	5.3 162	162			
	1536	-0.6 -18		1506	-0.6 -18		1616	-0.1 -3		1602	-0.6 -18		1509	-0.1 -3		1454	-0.7 -21	-21			
	2136	4.6 140		2103	4.7 143		2224	4.6 140		2213	5.4 165		2110	5.1 155		2103	6.0 183	183			
14	0344	-0.3 -9	29	0319	-0.3 -9	14	0434	0.1 3	29	0401	-0.3 -9	14	0331	-0.1 -3	29	0334	-0.7 -21	-21			
Su	0949	5.0 152	M	0925	5.2 158	W	1034	4.3 131	M	0922	4.5 137	W	0922	4.5 137	Th	0934	5.1 155	155			
	1616	-0.5 -15		1547	-0.6 -18		1648	0.1 3		1539	0.1 3		1539	0.1 3		1540	-0.5 -15	-15			
	2221	4.5 137		2147	4.8 146		2306	4.5 137		2213	5.4 165		2110	5.1 155		2103	6.0 183	183			
15	0426	0.0 0	30	0403	-0.3 -9	15	0513	0.4 12	30	0404	0.2 6	15	0404	0.2 6	30	0424	-0.5 -15	-15			
M	1031	4.7 143	Tu	1011	5.0 152	Th	1114	4.0 122	Th	0957	4.3 131	Th	0957	4.3 131	F	1028	4.8 146	146			
	1654	-0.2 -6		1623	-0.5 -15		1724	0.4 12		1608	0.3 9		1608	0.3 9		1628	-0.2 -6	-6			
	2306	4.4 134		2237	4.9 149		2346	4.4 134		2224	4.7 143		2224	4.7 143		2248	5.6 171	171			
			31	0450	-0.2 -6											31	0519	-0.1 -3	-3		
			W	1058	4.7 143											Sa	1125	4.5 137	137		
				1709	-0.4 -12												1722	0.2 6	6		
				2327	4.9 149												2346	5.3 162	162		

Time meridian 75° W. 0000 is midnight, 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

APRIL

MAY

JUNE

Time meridian 75° W. 0000 is midnight, 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

AUGUST

SEPTEMBER

SEPTEMBER																							
Time Height			Time Height			Time Height			Time Height			Time Height			Time Height			Time Height					
Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm
1 0203	4.2	128		16 0129	4.4	134		1 0311	3.8	116		16 0340	4.2	128		1 0441	4.1	125		16 0534	5.0	152	
Su 0833	0.8	24		M 0748	0.5	15		W 0929	1.1	34		Th 0945	0.6	18		Sa 1044	1.0	30		Su 1134	0.3	9	
1445	4.8	146		1409	5.3	162		1550	4.9	149		1609	5.5	168		1703	5.1	155		1752	5.6	171	
2114	1.1	34		2055	0.8	24		2222	1.0	30		2246	0.4	12		2326	0.6	18					
2 0258	4.0	122		17 0237	4.3	131		2 0417	3.8	116		17 0449	4.5	137		2 0532	4.5	137		17 0011	0.0	0	
M 0922	0.8	24		Tu 0853	0.4	12		Th 1022	1.1	34		F 1046	0.4	12		Su 1136	0.8	24		M 0621	5.3	162	
1540	4.9	149		1516	5.5	168		1646	5.1	155		1712	5.7	174		1750	5.4	165		1225	0.1	3	
2206	1.0	30		2159	0.6	18		2312	0.8	24		2342	0.1	3						1835	5.6	171	
3 0356	3.9	119		18 0350	4.3	131		3 0515	4.0	122		18 0548	4.8	146		3 0012	0.3	9		18 0054	-0.1	-3	
Tu 1009	0.8	24		W 0956	0.3	9		F 1113	1.0	30		Sa 1145	0.3	9		M 0616	4.9	149		Tu 0701	5.6	171	
1631	5.1	155		1622	5.7	174		1736	5.3	162		1808	5.9	180		1835	5.6	171		1312	0.1	3	
2255	0.8	24		2259	0.3	9										1222	0.5	15		1917	5.6	171	
4 0451	4.0	122		19 0459	4.5	137		4 0000	0.6	18		19 0035	-0.1	-3		4 0054	0.1	3		19 0135	-0.1	-3	
W 1054	0.8	24		Th 1055	0.2	6		Sa 0603	4.3	131		Su 0637	5.2	158		Tu 0656	5.2	158		W 0742	5.7	174	
1720	5.2	158		1724	6.0	183		1200	0.8	24		1240	0.1	3		1309	0.3	9		1357	0.0	0	
2344	0.7	21		2357	0.0	0		1821	5.5	168		1856	6.0	183		1914	5.8	177		1954	5.4	165	
5 0544	4.1	125		20 0557	4.7	143		5 0048	0.4	12		20 0123	-0.2	-6		5 0135	-0.1	-3		20 0215	0.0	0	
Th 1142	0.8	24		F 1155	0.1	3		Su 0646	4.5	137		M 0723	5.4	165		W 0736	5.5	168		Th 0818	5.7	174	
1805	5.4	165		1819	6.2	189		1250	0.7	21		1332	0.0	0		1354	0.1	3		1438	0.1	3	
								1901	5.6	171		1939	5.9	180		1955	5.8	177		2030	5.2	158	
6 0032	0.5	15		21 0053	-0.2	-6		6 0130	0.2	6		21 0207	-0.3	-9		6 0215	-0.2	-6		21 0251	0.1	3	
F 0629	4.2	128		Sa 0653	5.0	152		M 0725	4.8	146		Tu 0808	5.5	168		Th 0816	5.7	174		F 0854	5.6	171	
1227	0.8	24		1253	0.0	0		1333	0.5	15		1418	0.0	0		1440	0.0	0		1516	0.3	9	
1845	5.5	168		1909	6.2	189		1941	5.7	174		2020	5.7	174		2037	5.6	171		2107	4.9	149	
7 0117	0.4	12		22 0144	-0.3	-9		7 0209	0.1	3		22 0247	-0.2	-6		7 0254	-0.2	-6		22 0325	0.3	9	
Sa 0710	4.3	131		Su 0742	5.2	158		Tu 0804	5.0	152		W 0849	5.5	168		F 0859	5.8	177		Sa 0932	5.4	165	
1313	0.8	24		1348	0.0	0		1418	0.4	12		1502	0.1	3		1523	0.0	0		1552	0.5	15	
1925	5.6	171		1957	6.2	189		2019	5.7	174		2100	5.5	168		2121	5.4	165		2144	4.6	140	
8 0159	0.3	9		23 0232	-0.4	-12		8 0246	0.0	0		23 0326	-0.1	-3		8 0334	-0.1	-3		23 0357	0.6	18	
Su 0750	4.4	134		M 0830	5.3	162		W 0843	5.1	155		Th 0931	5.4	165		Sa 0944	5.8	177		Su 1011	5.2	158	
1357	0.7	21		1438	0.0	0		1500	0.4	12		1542	0.3	9		1610	0.1	3		1631	0.6	24	
2004	5.6	171		2043	6.0	183		2059	5.6	171		2141	5.2	158		2210	5.1	155		2223	4.3	131	
9 0239	0.2	6		24 0316	-0.4	-12		9 0323	0.0	0		24 0400	0.2	6		9 0416	0.0	0		24 0429	0.9	27	
M 0830	4.5	137		Tu 0918	5.3	162		Th 0926	5.3	162		F 1011	5.3	162		Su 1036	5.7	174		M 1053	5.0	152	
1438	0.7	21		1525	0.1	3		1541	0.4	12		1623	0.6	18		1701	0.4	12		1711	1.0	30	
2043	5.5	168		2128	5.7	174		2141	5.4	165		2221	4.8	146		2304	4.8	146		2304	4.0	122	
10 0316	0.2	6		25 0357	-0.2	-6		10 0400	0.0	0		25 0437	0.5	15		10 0504	0.3	9		25 0501	1.2	37	
Tu 0909	4.6	140		W 1005	5.2	158		F 1010	5.3	162		Sa 1053	5.1	155		M 1133	5.6	171		Tu 1135	4.8	146	
1515	0.7	21		1611	0.3	9		1624	0.5	15		1704	0.8	24		1804	0.6	18		1759	1.2	37	
2121	5.4	165		2215	5.3	162		2228	5.1	155		2300	4.5	137						2354	3.8	116	
11 0352	0.2	6		26 0439	0.0	0		11 0440	0.1	3		26 0511	0.8	24		11 0003	4.5	137		26 0545	1.4	43	
W 0949	4.7	143		Th 1053	5.1	155		Sa 1058	5.4	165		Su 1135	5.0	152		Tu 0602	0.6	18		W 1226	4.6	140	
1557	0.7	21		1656	0.6	18		1715	0.6	18		1749	1.1	34		1231	5.4	165		1903	1.4	43	
2203	5.2	158		2258	5.0	152		2319	4.9	149		2343	4.2	128		1915	0.8	24					
12 0429	0.2	6		27 0519	0.3	9		12 0525	0.3	9		27 0553	1.1	34		12 0108	4.3	131		27 0047	3.7	113	
Th 1034	4.8	146		F 1135	5.0	152		Su 1151	5.4	165		M 1220	4.8	146		W 0716	0.9	27		Th 0657	1.6	49	
1639	0.8	24		1743	0.9	27		1818	0.8	24		1843	1.3	40		1337	5.3	162		1321	4.5	137	
2248	5.1	155		2343	4.6	140									2029	0.8	24		2011	1.3	40		
13 0506	0.3	9		28 0602	0.6	18		13 0015	4.6	140		28 0031	4.0	122		13 0219	4.2	128		28 0152	3.7	113	
F 1122	4.9	149		Sa 1221	4.9	149		M 0620	0.5	15		Tu 0643	1.3	40		Th 0832	0.9	27		F 0818	1.5	46	
1730	0.9	27		1835	1.1	34		1248	5.4	165		1311	4.7	143		1448	5.2	158		1423	4.6	140	
2338	4.9	149						1929	0.9	27		1949	1.4	43		2133	0.6	18		2110	1.1	34	
14 0551	0.3	9		29 0027	4.3	131		14 0116	4.3	131		29 0124	3.8	116		14 0332	4.3	131		29 0300	3.9	119	
Sa 1214	5.1	155		Su 0649	0.9	27		Tu 0729	0.7	21		W 0750	1.4	43		F 0940	0.7	21		Sa 0921	1.3	40	
1834	0.9	27		1307	4.8	146		1350	5.4	165		1406	4.6	140		1558	5.3	162		1527	4.7	143	
				1934	1.3	40		2042	0.8	24		2051	1.3	40		2230	0.4	12		2201	0.8	24	
15 0030	4.6	140		30 0115	4.0	122		15 0226	4.2	128		30 0229	3.7	113		15 0438	4.6	140		30 0405	4.2	128	
Su 0646	0.4	12		M 0741	1.0	30		W 0839	0.7	21		Th 0853	1.4	43		Sa 1039	0.5	15		Su 1015	1.0	30	
1308	5.2	158		1358	4.8	146		1500	5.4	165		1508	4.7	143		1701	5.4	165		1627	4.9	149	
1944	0.9	27		2031	1.3	40		2147	0.6	18		2148	1.1	34		2323	0.2	6		2246	0.5	15	
				31 0208	3.9	119						31 0340	3.8	116									
				Tu 0837	1.1	34																	

Time meridian 75° W. 0000 is midnight. 1200 is noon.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER						NOVEMBER						DECEMBER							
Time		Height	Time		Height	Time		Height	Time		Height	Time		Height	Time		Height		
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm
1	0457	4.7	143		16	0557	5.4	165		1	0557	5.8	177		16	0031	0.1	3	
M	1105	0.6	18		Tu	1205	0.2	6		Th	1218	-0.2	-6		F	0645	5.4	165	
	1719	5.2	158			1813	5.1	155			1821	5.2	158			1307	0.1	3	
	2331	0.2	6													1903	4.4	134	
2	0544	5.2	158		17	0024	0.0	0		2	0027	-0.5	-15		17	0112	0.2	6	
Tu	1156	0.3	9		W	0637	5.6	171		F	0643	6.1	186		Sa	0722	5.4	165	
	1805	5.5	168			1250	0.1	3			1312	-0.5	-15			1349	0.1	3	
						1851	5.1	155			1908	5.3	162			1939	4.3	131	
3	0016	-0.1	-3		18	0104	0.0	0		3	0114	-0.6	-18		18	0150	0.3	9	
W	0627	5.6	171		Th	0714	5.7	174		Sa	0729	6.3	192		Su	0758	5.3	162	
	1243	0.0	0			1333	0.1	3			1403	-0.6	-18			1430	0.1	3	
	1848	5.6	171			1929	5.0	152			1956	5.2	158			2015	4.2	128	
4	0100	-0.3	-9		19	0142	0.1	3		4	0204	-0.5	-15		19	0226	0.4	12	
Th	0707	6.0	183		F	0749	5.6	171		Su	0816	6.3	192		M	0833	5.2	158	
	1333	-0.2	-6			1413	0.1	3			1454	-0.6	-18			1508	0.2	6	
	1930	5.6	171			2003	4.8	146			2046	5.0	152			2052	4.0	122	
5	0143	-0.4	-12		20	0218	0.2	6		5	0253	-0.4	-12		20	0301	0.6	18	
F	0751	6.2	189		Sa	0824	5.5	168		M	0907	6.2	189		Tu	0910	5.0	152	
	1419	-0.3	-9			1450	0.2	6			1544	-0.5	-15			1544	0.3	9	
	2014	5.5	168			2037	4.5	137			2141	4.8	146			2131	3.9	119	
6	0227	-0.4	-12		21	0252	0.4	12		6	0344	-0.2	-6		21	0333	0.7	21	
Sa	0835	6.2	189		Su	0859	5.3	162		Tu	1002	5.9	180		W	0946	4.8	146	
	1507	-0.3	-9			1528	0.4	12			1637	-0.3	-9			1620	0.4	12	
	2102	5.3	162			2112	4.3	131			2242	4.6	140			2211	3.8	116	
7	0310	-0.3	-9		22	0323	0.6	18		7	0439	0.1	3		22	0405	0.9	27	
Su	0923	6.1	186		M	0935	5.1	155		W	1101	5.5	168		Th	1029	4.7	143	
	1556	-0.2	-6			1604	0.6	18			1735	0.0	0			1701	0.6	18	
	2155	5.0	152			2152	4.1	125			2343	4.4	134			2258	3.7	113	
8	0357	0.0	0		23	0355	0.9	27		8	0541	0.5	15		23	0444	1.0	30	
M	1016	5.9	180		Tu	1013	4.9	149		Th	1202	5.2	158		F	1116	4.5	137	
	1650	0.1	3			1643	0.8	24			1839	0.2	6			1741	0.6	18	
	2253	4.7	143			2234	3.9	119								2349	3.8	116	
9	0450	0.3	9		24	0424	1.1	34		9	0047	4.4	134		24	0536	1.1	34	
Tu	1116	5.6	171		W	1058	4.7	143		F	0652	0.7	21		Sa	1204	4.4	134	
	1751	0.4	12			1725	1.0	30			1303	4.9	149			1834	0.7	21	
	2356	4.4	134			2325	3.7	113			1945	0.3	9						
10	0552	0.6	18		25	0506	1.3	40		10	0148	4.4	134		25	0039	3.9	119	
W	1218	5.4	165		Th	1146	4.6	140		Sa	0802	0.7	21		Su	0647	1.1	34	
	1859	0.6	18			1820	1.1	34			1407	4.7	143			1257	4.3	131	
											2045	0.3	9			1934	0.6	18	
11	0101	4.3	131		26	0018	3.7	113		11	0251	4.5	137		26	0137	4.1	125	
Th	0705	0.9	27		F	0606	1.5	46		Su	0906	0.6	18		M	0805	1.0	30	
	1324	5.1	155			1239	4.5	137			1508	4.5	137			1357	4.3	131	
	2012	0.6	18			1925	1.1	34			2137	0.2	6			2031	0.4	12	
12	0210	4.3	131		27	0116	3.8	116		12	0350	4.7	143		27	0237	4.4	134	
F	0822	0.9	27		Sa	0734	1.4	43		M	1002	0.5	15		Tu	0910	0.7	21	
	1431	5.0	152			1340	4.4	134			1608	4.5	137			1500	4.3	131	
	2114	0.5	15			2026	0.9	27			2225	0.1	3			2124	0.1	3	
13	0316	4.5	137		28	0217	4.0	122		13	0441	5.0	152		28	0338	4.8	146	
Sa	0929	0.7	21		Su	0844	1.2	37		Tu	1054	0.3	9		W	1006	0.3	9	
	1538	4.9	149			1442	4.5	137			1659	4.5	137			1605	4.4	134	
	2209	0.3	9			2117	0.6	18			2308	0.1	3			2215	-0.2	-6	
14	0420	4.8	146		29	0321	4.3	131		14	0527	5.2	158		29	0435	5.3	162	
Su	1025	0.5	15		M	0942	0.9	27		W	1140	0.2	6		Th	1102	-0.1	-3	
	1638	5.0	152			1541	4.6	140			1744	4.5	137			1705	4.6	140	
	2257	0.1	3			2207	0.3	9			2350	0.1	3			2307	-0.4	-12	
15	0513	5.1	155		30	0417	4.8	146		15	0608	5.3	162		30	0531	5.7	174	
M	1115	0.3	9		Tu	1035	0.5	15		Th	1225	0.1	3		F	1158	-0.4	-12	
	1728	5.1	155			1641	4.9	149			1826	4.5	137			1757	4.8	146	
	2342	0.0	0			2251	0.0	0								2358	-0.6	-18	
					31	0510	5.3	162							15	0001	0.2	6	
					W	1128	0.1	3							Sa	0620	5.1	155	
						1733	5.1	155								1243	0.1	3	
						2339	-0.3	-9								1840	4.0	122	

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JANUARY

FEBRUARY

MARCH

Time Height				Time Height				Time Height				Time Height				Time Height			
Day		Day		Day		Day		Day		Day		Day		Day		Day			
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm		
1 0443	-0.1	-3	16 0551	0.1	3	1 0010	4.3	131	16 0034	3.9	119	1 0508	-0.4	-12	16 0530	0.3	9		
M 1113	4.5	137	Tu 1208	3.9	119	Th 0618	-0.1	-3	F 0653	0.5	15	Th 1121	4.1	125	F 1133	3.5	107		
1728	-0.2	-6	1822	0.1	3	1228	3.8	116	1253	3.2	98	1717	-0.4	-12	1727	0.4	12		
2342	3.8	116				1834	-0.3	-9	1855	0.4	12	2349	4.8	146	2354	4.2	128		
2 0535	0.0	0	17 0039	3.7	113	2 0107	4.3	131	17 0127	3.8	116	2 0605	-0.2	-6	17 0615	0.6	18		
Tu 1159	4.3	131	W 0644	0.4	12	F 0721	0.1	3	Sa 0748	0.7	21	F 1213	3.7	113	Sa 1215	3.3	101		
1813	-0.2	-6	1254	3.6	110	1327	3.5	107	1342	3.0	91	1810	-0.2	-6	1809	0.6	18		
			1903	0.2	6	1928	-0.2	-6	1944	0.6	18								
3 0035	3.9	119	18 0126	3.7	113	3 0211	4.3	131	18 0220	3.8	116	3 0047	4.6	140	18 0041	4.1	125		
W 0634	0.1	3	Th 0740	0.5	15	Sa 0830	0.2	6	Su 0850	0.8	24	Sa 0708	0.1	3	Su 0703	0.8	24		
1252	4.0	122	1340	3.3	101	1431	3.2	98	1440	2.9	88	1311	3.4	104	1303	3.1	94		
1903	-0.2	-6	1950	0.4	12	2031	-0.1	-3	2039	0.6	18	1907	0.0	0	1858	0.7	21		
4 0131	4.0	122	19 0219	3.7	113	4 0320	4.4	134	19 0321	3.8	116	4 0153	4.5	137	19 0135	4.0	122		
Th 0737	0.2	6	F 0840	0.7	21	Su 0945	0.3	9	M 0953	0.8	24	Su 0817	0.4	12	M 0801	0.9	27		
1348	3.7	113	1432	3.0	91	1545	3.1	94	1540	2.8	85	1421	3.2	98	1358	3.0	91		
1958	-0.2	-6	2039	0.4	12	2137	0.0	0	2139	0.5	15	2016	0.2	6	1955	0.7	21		
5 0233	4.2	128	20 0314	3.7	113	5 0430	4.5	137	20 0422	3.9	119	5 0306	4.4	134	20 0237	3.9	119		
F 0847	0.2	6	Sa 0941	0.7	21	M 1055	0.2	6	Tu 1053	0.7	21	M 0934	0.4	12	Tu 0905	0.9	27		
1450	3.5	107	1529	2.9	88	1659	3.1	94	1644	3.0	91	1539	3.1	94	1500	3.0	91		
2055	-0.2	-6	2132	0.4	12	2246	-0.1	-3	2236	0.4	12	2129	0.3	9	2055	0.7	21		
6 0338	4.4	134	21 0410	3.9	119	6 0539	4.6	140	21 0521	4.2	128	6 0422	4.4	134	21 0339	4.0	122		
Sa 0957	0.2	6	Su 1041	0.6	18	Tu 1201	0.0	0	W 1142	0.5	15	Tu 1046	0.4	12	W 1004	0.8	24		
1557	3.3	101	1628	2.9	88	1806	3.3	101	1739	3.2	98	1654	3.3	101	1605	3.2	98		
2156	-0.2	-6	2222	0.4	12	2347	-0.2	-6	2330	0.1	3	2239	0.2	6	2200	0.5	15		
7 0441	4.6	140	22 0505	4.0	122	7 0638	4.8	146	22 0611	4.4	134	7 0529	4.5	137	22 0439	4.2	128		
Su 1105	0.0	0	M 1134	0.5	15	W 1256	-0.1	-3	Th 1229	0.2	6	W 1147	0.2	6	Th 1058	0.5	15		
1707	3.3	101	1723	2.9	88	1901	3.5	107	1829	3.5	107	1758	3.5	107	1702	3.5	107		
2257	-0.3	-9	2313	0.2	6						2344	0.0	0	2259	0.3	9			
8 0545	4.9	149	23 0555	4.2	128	8 0045	-0.4	-12	23 0019	-0.1	-3	8 0627	4.6	140	23 0533	4.4	134		
M 1208	-0.1	-3	Tu 1221	0.3	9	Th 0730	4.9	149	F 0656	4.6	140	Th 1237	0.1	3	F 1147	0.3	9		
1809	3.4	104	1811	3.1	94	1344	-0.3	-9	1309	0.0	0	1850	3.8	116	1756	3.9	119		
2355	-0.4	-12				1952	3.7	113	1914	3.8	116				2353	0.0	0		
9 0644	5.1	155	24 0000	0.0	0	9 0138	-0.5	-15	24 0107	-0.4	-12	9 0038	-0.1	-3	24 0622	4.6	140		
Tu 1305	-0.3	-9	W 0643	4.4	134	F 0815	4.9	149	Sa 0740	4.8	146	F 0715	4.6	140	Sa 1229	0.0	0		
1909	3.5	107	1303	0.2	6	1427	-0.4	-12	1349	-0.3	-9	1322	-0.1	-3	1845	4.3	131		
			1859	3.2	98	2036	3.9	119	1959	4.1	125	1935	4.0	122					
10 0051	-0.6	-18	25 0045	-0.2	-6	10 0224	-0.5	-15	25 0154	-0.6	-18	10 0127	-0.2	-6	25 0045	-0.3	-9		
W 0738	5.2	158	Th 0725	4.6	140	Sa 0857	4.8	146	Su 0822	4.9	149	Sa 0758	4.6	140	Su 0711	4.7	143		
1357	-0.4	-12	1342	0.0	0	1508	-0.4	-12	1427	-0.5	-15	1402	-0.2	-6	1312	-0.3	-9		
2002	3.6	110	1942	3.4	104	2118	4.0	122	2042	4.4	134	2014	4.2	128	1931	4.7	143		
11 0144	-0.6	-18	26 0128	-0.3	-9	11 0310	-0.5	-15	26 0240	-0.7	-21	11 0211	-0.3	-9	26 0134	-0.6	-18		
Th 0830	5.2	158	F 0806	4.8	146	Su 0937	4.6	140	M 0904	4.8	146	Su 0836	4.6	140	M 0757	4.8	146		
1446	-0.5	-15	1421	-0.2	-6	1545	-0.3	-9	1507	-0.6	-18	1436	-0.2	-6	1354	-0.5	-15		
2053	3.7	113	2024	3.6	110	2157	4.1	125	2126	4.7	143	2050	4.4	134	2017	5.1	155		
12 0235	-0.6	-18	27 0211	-0.5	-15	12 0352	-0.3	-9	27 0327	-0.7	-21	12 0252	-0.3	-9	27 0224	-0.7	-21		
F 0917	5.1	155	Sa 0848	4.9	149	M 1015	4.4	134	Tu 0949	4.7	143	M 0912	4.4	134	Tu 0843	4.7	143		
1531	-0.5	-15	1458	-0.4	-12	1621	-0.2	-6	1549	-0.6	-18	1510	-0.1	-3	1438	-0.6	-18		
2139	3.7	113	2106	3.8	116	2233	4.1	125	2210	4.8	146	2127	4.4	134	2102	5.3	162		
13 0326	-0.5	-15	28 0255	-0.6	-18	13 0435	-0.2	-6	28 0417	-0.6	-18	13 0331	-0.2	-6	28 0314	-0.8	-24		
Sa 1000	4.9	149	Su 0928	4.8	146	Tu 1051	4.1	125	W 1033	4.4	134	Tu 0947	4.2	128	W 0927	4.6	140		
1617	-0.4	-12	1538	-0.5	-15	1656	-0.1	-3	1632	-0.6	-18	1544	0.0	0	1521	-0.6	-18		
2224	3.8	116	2149	4.0	122	2312	4.0	122	2258	4.9	149	2159	4.4	134	2150	5.4	165		
14 0412	-0.3	-9	29 0342	-0.6	-18	14 0519	0.1	3	14 0411	-0.1	-3	14 0411	-0.1	-3	29 0403	-0.6	-18		
Su 1043	4.6	140	M 1008	4.7	143	W 1129	3.8	116	W 1019	4.0	122	W 1019	4.0	122	Th 1016	4.3	131		
1659	-0.3	-9	1617	-0.5	-15	1733	0.1	3	1615	0.1	3	1615	0.1	3	1608	-0.5	-15		
2308	3.8	116	2232	4.2	128	2351	4.0	122	2235	4.4	134	2235	4.4	134	2240	5.3	162		
15 0501	-0.1	-3	30 0429	-0.5	-15	15 0605	0.3	9	15 0450	0.1	3	15 0450	0.1	3	30 0457	-0.4	-12		
M 1126	4.3	131	Tu 1052	4.5	137	Th 1210	3.5	107	Th 1056	3.7	113	Th 1056	3.7	113	F 1106	4.0	122		
1740	-0.1	-3	1700	-0.5	-15	1812	0.3	9	1650	0.3	9	1650	0.3	9	1657	-0.3	-9		
2354	3.7	113	2320	4.3	131				2312	4.3	131	2312	4.3	131	2333	5.1	155		
			31 0521	-0.3	-9									31 0554	-0.1	-3			
			W 1138	4.2	128									Sa 1202	3.7	113			
			1745	-0.4	-12									1751	0.0	0			

Time meridian 75° W. 0000 is midnight. 1200 is noon.
 Heights are referred to mean lower low water which is the chart datum of soundings.

BREAKWATER HARBOR, DEL., 1990
Times and Heights of High and Low Waters

21

APRIL								MAY								JUNE															
Time				Height				Time				Height				Time				Height				Time				Height			
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm		
1 Su	0031	4.9	149		16 M	0009	4.3	131		1 Tu	0121	4.7	143		16 W	0028	4.4	134		1 F	0256	4.0	122		16 Sa	0140	4.2	128			
	0657	0.2	6			0631	0.7	21			0749	0.3	9			0651	0.5	15			0911	0.4	12			0755	0.1	3			
	1303	3.5	107			1234	3.3	101			1404	3.6	110			1302	3.5	107			1539	4.1	125			1424	4.3	131			
	1855	0.2	6			1820	0.7	21			1952	0.6	18			1849	0.7	21			2143	0.7	21			2031	0.5	15			
2 M	0137	4.6	140		17 Tu	0058	4.2	128		2 W	0229	4.4	134		17 Th	0119	4.3	131		2 Sa	0353	3.8	116		17 Su	0238	4.0	122			
	0806	0.4	12			0723	0.8	24			0853	0.4	12			0740	0.5	15			0959	0.5	15			0845	0.1				
	1414	3.4	104			1327	3.2	98			1512	3.7	113			1356	3.7	113			1630	4.2	128			1521	4.6	140			
	2004	0.4	12			1918	0.8	24			2104	0.6	18			1951	0.7	21			2244	0.7	21			2136	0.4	12			
3 Tu	0251	4.4	134		18 W	0154	4.2	128		3 Th	0335	4.2	128		18 F	0215	4.2	128		3 Su	0449	3.6	110		18 M	0340	3.8	116			
	0918	0.5	15			0821	0.8	24			0952	0.5	15			0833	0.4	12			1046	0.5	15			0942	0.0	0			
	1532	3.4	104			1427	3.3	101			1617	3.9	119			1456	3.9	119			1721	4.4	134			1620	4.9	149			
	2120	0.5	15			2021	0.7	21			2212	0.6	18			2056	0.6	18			2339	0.6	18			2241	0.2	6			
4 W	0406	4.3	131		19 Th	0254	4.2	128		4 F	0437	4.1	125		19 Sa	0313	4.2	128		4 M	0539	3.5	107		19 Tu	0442	3.8	116			
	1024	0.5	15			0917	0.7	21			1045	0.4	12			0926	0.2	6			1130	0.5	15			1041	-0.1	-3			
	1642	3.6	110			1527	3.6	110			1713	4.1	125			1552	4.3	131			1803	4.5	137			1721	5.2	158			
	2231	0.4	12			2126	0.6	18			2313	0.5	15			2201	0.4	12								2344	0.0	0			
5 Th	0509	4.3	131		20 F	0355	4.2	128		5 Sa	0532	4.0	122		20 Su	0412	4.1	125		5 Tu	0027	0.5	15		20 W	0545	3.8	116			
	1123	0.4	12			1009	0.5	15			1131	0.4	12			1020	0.1	3			0624	3.5	107			1136	-0.2	-6			
	1739	3.8	116			1626	3.9	119			1758	4.3	131			1649	4.7	143			1209	0.5	15			1819	5.5	168			
	2331	0.3	9			2228	0.4	12							2302	0.1	3			1843	4.7	143									
6 F	0604	4.4	134		21 Sa	0454	4.3	131		6 Su	0005	0.4	12		21 M	0511	4.1	125		6 W	0109	0.4	12		21 Th	0043	-0.1	-3			
	1209	0.2	6			1100	0.2	6			0620	3.9	119			1111	-0.1	-3			0707	3.5	107			0648	3.8	116			
	1830	4.1	125			1723	4.3	131			1212	0.3	9			1744	5.1	155			1248	0.4	12			1232	-0.3	-9			
						2326	0.1	3			1840	4.5	137								1922	4.8	146			1917	5.6	171			
7 Sa	0025	0.1	3		22 Su	0547	4.4	134		7 M	0051	0.3	9		22 Tu	0002	-0.1	-3		7 Th	0149	0.3	9		22 F	0746	3.9	119			
	0651	4.3	131			1150	-0.1	-3			0702	3.9	119			0609	4.1	125			0746	3.5	107			1328	-0.4	-12			
	1251	0.2	6			1813	4.8	146			1248	0.3	9			1203	-0.3	-9			1326	0.4	12			2012	5.7	174			
	1909	4.3	131								1917	4.7	143			1837	5.5	168			2001	4.8	146								
8 Su	0111	0.0	0		23 M	0022	-0.3	-9		8 Tu	0134	0.2	6		23 W	0059	-0.4	-12		8 F	0228	0.3	9		23 Sa	0234	-0.4	-12			
	0733	4.3	131			0639	4.5	137			0741	3.8	116			0706	4.1	125			0825	3.5	107			0842	3.9	119			
	1328	0.1	3			1236	-0.3	-9			1323	0.3	9			1254	-0.4	-12			1405	0.4	12			1423	-0.4	-12			
	1948	4.5	137			1904	5.2	158			1951	4.8	146			1931	5.7	174			2040	4.9	149			2106	5.7	174			
9 M	0153	0.0	0		24 Tu	0117	-0.5	-15		9 W	0213	0.1	3		24 Th	0154	-0.5	-15		9 Sa	0304	0.3	9		24 Su	0327	-0.4	-12			
	0810	4.2	128			0731	4.5	137			0817	3.8	116			0801	4.1	125			0903	3.5	107			0936	4.0	122			
	1402	0.1	3			1322	-0.5	-15			1359	0.3	9			1346	-0.5	-15			1443	0.4	12			1518	-0.3	-9			
	2023	4.7	143			1951	5.5	168			2026	4.8	146			2024	5.8	177			2118	4.9	149			2158	5.5	168			
10 Tu	0233	-0.1	-3		25 W	0208	-0.6	-18		10 Th	0248	0.2	6		25 F	0247	-0.5	-15		10 Sa	0340	0.3	9		25 Su	0418	-0.3	-9			
	0843	4.1	125			0820	4.4	134			0850	3.7	113			0854	4.1	125			0941	3.5	107			1028	4.1	125			
	1434	0.2	6			1410	-0.5	-15			1433	0.4	12			1438	-0.4	-12			1521	0.4	12			1613	-0.1	-3			
	2055	4.7	143			2041	5.7	174			2102	4.8	146			2118	5.8	177			2155	4.8	146			2248	5.2	158			
11 W	0310	0.0	0		26 Th	0300	-0.7	-21		11 F	0324	0.2	6		26 Sa	0341	-0.5	-15		11 M	0418	0.3	9		26 Tu	0508	-0.2	-6			
	0916	4.0	122			0909	4.3	131			0927	3.6	110			0949	4.0	122			1021	3.6	110			1122	4.1	125			
	1506	0.2	6			1457	-0.5	-15			1509	0.4	12			1531	-0.3	-9			1601	0.4	12			1709	0.1	3			
	2128	4.7	143			2132	5.7	174			2139	4.8	146			2211	5.6	171			2236	4.8	146			2339	4.9	149			
12 Th	0346	0.1	3		27 F	0353	-0.6	-18		12 Sa	0402	0.3	9		27 Su	0435	-0.3	-9		12 M	0456	0.3	9		27 W	0557	0.0	0			
	0951	3.8	116			1001	4.2	128			1003	3.6	110			1043	3.9	119			1103	3.6	110			1213	4.1	125			
	1541	0.3	9			1547	-0.4	-12			1544	0.5	15			1626	-0.1	-3			1645	0.4	12			1804	0.3	9			
	2203	4.7	143			2224	5.6	171			2219	4.7	143			2306	5.3	162			2317	4.7	143								
13 F	0424	0.2	6		28 Sa	0447	-0.3	-9		13 Su	0440	0.4	12		28 M	0530	-0.1	-3		13 W	0536	0.3	9		28 Th	0646	0.1	3			
	1027	3.7	113			1056	4.0	122			1042	3.5	107			1141	3.9	119			1149	3.7	113			1308	4.1	125			
	1613	0.4	12			1640	-0.2	-6			1623	0.5	15			1725	0.1	3			1735	0.5	15			1904	0.5	15			
	2242	4.6	140			2320	5.3	162			2258	4.6	140																		
14 Sa	0503	0.4	12		29 Su	0542	-0.1	-3		14 M	0520	0.5	15		29 Tu	0001	5.0	152		14 Th	0001	4.5	137		29 F	0734	0.3	9			
	1104	3.5	107			1153	3.8	116			1124	3.4.																			

Times and Heights of High and Low Waters

JULY								AUGUST								SEPTEMBER															
Time				Height				Time				Height				Time				Height				Time				Height			
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm		
1 Su	0304	3.5	107		16 M	0212	3.8	116		1 I	0410	3.2	98		16 Th	0415	3.5	107		1 Su	0523	3.6	110		16 Su	0003	0.4	12			
	0909	0.6	18			0817	0.1	3			W	1005	0.8	24			1106	0.3	9			Sa	1113	0.7	21		Su	0620	4.2	128	
	1545	4.2	128			1457	4.8	146				1646	4.4	134			1657	5.1	155				1752	4.8	146			1207	0.3	9	
	2209	0.8	24			2117	0.5	15				2321	0.9	27			2323	0.5	15									1840	5.1	155	
2 M	0400	3.4	104		17 Tu	0316	3.6	110		2 Th	0507	3.3	101		17 F	0526	3.7	113		2 Su	0011	0.7	21		17 M	0051	0.3	9			
	0959	0.6	18			0916	0.1	3				1054	0.7	21			1110	0.2	6			Su	0611	3.9	119			0707	4.5	133	
	1636	4.3	131			1600	5.0	152				1739	4.6	140			1800	5.2	158				1202	0.5	15			1259	0.2	6	
	2305	0.8	24			2226	0.4	12															1835	4.9	149			1930	5.1	155	
3 Tu	0454	3.3	101		18 W	0423	3.5	107		3 F	0008	0.8	24		18 Sa	0021	0.3	9		3 M	0051	0.5	15		18 Tu	0133	0.2	6			
	1046	0.6	18			W	1017	0.1	3			F	0558	3.4	104			0627	3.9	119			M	0657	4.2	128			0752	4.7	143
	1726	4.5	137			1707	5.2	158				1144	0.6	18			1212	0.1	3				1248	0.3	9			1347	0.1	3	
	2355	0.7	21			2332	0.3	9				1824	4.7	143			1856	5.3	162				1920	5.1	155			2012	4.9	149	
4 W	0547	3.3	101		19 Th	0531	3.6	110		4 Sa	0053	0.7	21		19 Su	0112	0.1	3		4 Tu	0127	0.3	9		19 W	0211	0.2	6			
	1131	0.6	18			1118	0.0	0				0645	3.5	107			0723	4.2	128			Tu	0739	4.5	137			0831	4.9	149	
	1811	4.6	140			1808	5.3	162				1229	0.5	15			1307	0.0	0				1334	0.1	3			1432	0.1	3	
												1909	4.9	149			1947	5.4	165				2000	5.1	155			2049	4.8	146	
5 Th	0043	0.6	18		20 F	0033	0.1	3		5 Su	0129	0.5	15		20 M	0159	0.0	0		5 W	0206	0.1	3		20 Th	0248	0.2	6			
	0633	3.3	101			F	0635	3.7	113			Su	0728	3.7	113			0812	4.4	134				0821	4.8	146			0908	5.0	152
	1215	0.5	15			1220	-0.1	-3				1314	0.3	9			1400	-0.1	-3				1418	0.0	0			1515	0.2	6	
	1856	4.7	143			1906	5.5	168				1950	5.0	152			2033	5.3	162				2040	5.1	155			2127	4.6	140	
6 F	0124	0.5	15		21 Sa	0130	-0.1	-3		6 Tu	0207	0.3	9		21 Th	0242	0.0	0		6 W	0243	-0.1	-3		21 Th	0324	0.3	9			
	0717	3.4	104			0733	3.9	119			M	0809	4.0	122			0855	4.6	140				0902	5.0	152			F	0945	5.0	152
	1257	0.4	12			1317	-0.2	-6				1355	0.2	6			1449	0.0	0				1504	-0.1	-3			1557	0.4	12	
	1938	4.8	146			2001	5.5	168				2028	5.1	155			2117	5.1	155				2123	4.9	149			2203	4.3	131	
7 Sa	0203	0.4	12		22 Su	0219	-0.2	-6		7 Tu	0242	0.2	6		22 Th	0323	0.0	0		7 F	0322	-0.1	-3		22 Sa	0358	0.5	15			
	0757	3.5	107			0828	4.1	125				0850	4.2	128			W	0940	4.7	143				0946	5.2	158			1021	4.9	149
	1339	0.3	9			1411	-0.2	-6				1439	0.1	3			1536	0.1	3				1552	0.0	0			1639	0.5	15	
	2018	4.9	149			2051	5.5	168				2109	5.1	155			2158	4.9	149				2205	4.7	143			2242	4.0	122	
8 Su	0238	0.3	9		23 M	0308	-0.2	-6		8 W	0318	0.0	0		23 Th	0400	0.1	3		8 Sa	0405	-0.1	-3		23 Su	0435	0.7	21			
	0838	3.6	110			0919	4.2	128			W	0932	4.4	134			1019	4.7	143				1032	5.3	162			1103	4.8	146	
	1419	0.3	9			1505	-0.2	-6				1523	0.1	3			1622	0.2	6				1643	0.1	3			1722	0.8	24	
	2057	5.0	152			2139	5.3	162				2150	5.0	152			2237	4.6	140				2253	4.5	137			2322	3.8	116	
9 M	0315	0.2	6		24 Tu	0353	-0.2	-6		9 Th	0355	0.0	0		24 F	0440	0.3	9		9 Su	0450	0.0	0		24 M	0514	0.8	24			
	0917	3.7	113			1007	4.3	131				1013	4.6	140			1100	4.7	143			Su	1122	5.3	162			M	1145	4.6	140
	1501	0.2	6			1556	-0.1	-3				1608	0.1	3			1709	0.5	15				1736	0.3	9			1810	1.0	30	
	2134	5.0	152			2224	5.1	155				2229	4.8	146			2317	4.2	128				2343	4.1	125					30	
10 Tu	0350	0.2	6		25 W	0439	-0.1	-3		10 Th	0435	-0.1	-3		25 Sa	0518	0.5	15		10 M	0538	0.2	6		25 Tu	0005	3.6	110			
	0958	3.8	116			W	1053	4.4	134			F	1057	4.7	143			1142	4.6	140				1218	5.2	158			0557	1.0	30
	1542	0.2	6			1647	0.1	3				1657	0.2	6			1757	0.7	21				1839	0.5	15			1231	4.5	137	
	2214	4.9	149			2309	4.8	146				2313	4.5	137			2359	3.9	119								1902	1.2	37		
11 W	0427	0.1	3		26 Th	0520	0.1	3		11 Sa	0517	0.0	0		26 Su	0559	0.7	21		11 Tu	0039	3.9	119		26 W	0055	3.4	104			
	1039	4.0	122			1139	4.4	134				1143	4.8	146			1226	4.5	137				0634	0.4	12			0646	1.1	34	
	1624	0.2	6			1738	0.4	12				1751	0.3	9			1847	0.9	27				1319	5.1	155			1327	4.4	134	
	2253	4.8	146			2353	4.4	134															1944	0.7	21			1959	1.3	40	
12 Th	0506	0.0	0		27 F	0604	0.2	6		12 Su	0602	4.3	131		27 M	0642	3.6	110		12 W	0145	3.7	113		27 Th	0151	3.4	104			
	1122	4.1	125			F	1225	4.3	131			Su	0604	0.1	3			0642	0.9	27				0739	0.6	18			0745	1.2	37
	1715	0.3	9			1830	0.6	18				1236	4.9	149			1313	4.4	134				1428	5.0	152			1424	4.4	134	
	2335	4.6	140									1850	0.5	15			1943	1.1	34				2057	0.8	24			2058	1.3	40	
13 F	0548	0.0	0		28 Sa	0608	4.0	122		13 Tu	0054	4.0	122		28 Th	0135	3.4	104		13 W	0259	3.6	110		28 Th	0251	3.4	104			
	1211	4.3	131			0647	0.4	12			M	0654	0.2	6			0731	1.0	30				0848	0.6	18			F	0845	1.1	34
	1807	0.4	12			1311	4.3	131				1334	4.9	149			1409	4.3	131				1541	4.9	149			1523	4.4	134	
						1927	0.8	24				1956	0.6	18			2042	1.2	37				2206	0.7	21			2153	1.1	34	
14 Sa	0024	4.3	131		29 Su	0126	3.7	113		14 Tu	0153	3.7	113		29 Th	0230	3.3	101		14 F	0415	3.7	113		29 Sa	0351	3.6	110			
	0632	0.0	0			0732	0.6	18				0753	0.3	9			W	0827	1.1	34				1001	0.6	18			0945	1.0	30
	1301	4.5	137			1402	4.3	131				1439	4.9	149			1508	4.3	131				1649	5.0	152			1619	4.5	137	
	1906	0.4	12			2025	0.9	27				2106	0.7	21			2144	1.2	37				2312	0.6	18			2241	0.9	27	
15 Su	0115	4.1	125		30 M	0216	3.4	104		15 W	0302	3.5	107		30 Th	0329	3.3	101		15 Sa	0523	3.9	119		30 Su	0447	3.8	116			
	0721	0.1	3			0819	0.8	24				0857	0.4	12			0923	1.0	30				1107	0.5	15			Su	1041	0.8	24
	1356	4.6	140			1455	4.3	131				1548	5.0	152			1606	4.4	134				1749	5.1	155			1710	4.7</		

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER				NOVEMBER				DECEMBER							
Time		Height		Time		Height		Time		Height		Time		Height	
Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm
1	0537	4.2	128	16	0022	0.3	9	1	0009	-0.1	-3	16	0106	0.2	6
M	1133	0.5	15	Tu	0645	4.7	143	Th	0637	5.3	162	F	0736	4.9	149
	1800	4.8	146		1246	0.3	9		1249	-0.2	-6		1354	0.2	6
					1906	4.6	140		1859	4.5	137		1957	3.8	116
2	0007	0.4	12	17	0101	0.2	6	2	0053	-0.3	-9	17	0142	0.3	9
Tu	0623	4.6	140	W	0727	4.9	149	F	0724	5.6	171	Sa	0813	4.9	149
	1223	0.2	6		1333	0.2	6		1340	-0.3	-9		1435	0.2	6
	1843	4.9	149		1945	4.5	137		1949	4.5	137		2032	3.7	113
3	0046	0.1	3	18	0138	0.2	6	3	0140	-0.4	-12	18	0217	0.3	9
W	0708	5.0	152	Th	0803	5.0	152	Sa	0813	5.8	177	Su	0848	4.9	149
	1310	0.0	0		1415	0.2	6		1430	-0.4	-12		1511	0.3	9
	1928	4.9	149		2024	4.3	131		2037	4.4	134		2108	3.6	110
4	0128	-0.1	-3	19	0213	0.3	9	4	0227	-0.4	-12	19	0253	0.4	12
Th	0751	5.3	162	F	0838	5.1	155	Su	0903	5.9	180	M	0926	4.8	146
	1358	-0.2	-6		1452	0.3	9		1523	-0.3	-9		1550	0.4	12
	2015	4.9	149		2059	4.1	125		2128	4.2	128		2146	3.5	107
5	0209	-0.2	-6	20	0246	0.4	12	5	0316	-0.3	-9	20	0329	0.4	12
F	0837	5.6	171	Sa	0914	5.0	152	M	0955	5.8	177	Tu	1003	4.7	143
	1446	-0.2	-6		1533	0.4	12		1616	-0.2	-6		1627	0.5	15
	2058	4.7	143		2133	4.0	122		2221	4.0	122		2224	3.4	104
6	0251	-0.2	-6	21	0321	0.5	15	6	0408	-0.2	-6	21	0408	0.5	15
Sa	0923	5.7	174	Su	0951	4.9	149	Tu	1050	5.6	171	W	1043	4.6	140
	1536	-0.2	-6		1611	0.5	15		1712	0.0	0		1707	0.6	18
	2147	4.5	137		2211	3.8	116		2320	3.9	119		2306	3.3	101
7	0337	-0.1	-3	22	0400	0.7	21	7	0506	0.1	3	22	0450	0.6	18
Su	1010	5.7	174	M	1029	4.8	146	W	1149	5.3	162	Th	1127	4.5	137
	1629	0.0	0		1653	0.7	21		1815	0.2	6		1749	0.6	18
	2235	4.3	131		2250	3.6	110						2353	3.3	101
8	0427	0.0	0	23	0436	0.8	24	8	0023	3.7	113	23	0537	0.7	21
M	1104	5.6	171	Tu	1112	4.7	143	Th	0607	0.3	9	F	1213	4.3	131
	1725	0.2	6		1735	0.9	27		1252	5.0	152		1834	0.6	18
	2330	4.0	122		2335	3.5	107		1919	0.4	12		1950	0.1	3
9	0519	0.2	6	24	0520	0.9	27	9	0132	3.7	113	24	0042	3.4	104
Tu	1202	5.3	162	W	1157	4.5	137	F	0716	0.6	18	Sa	0629	0.8	24
	1827	0.5	15		1825	1.0	30		1359	4.7	143		1303	4.2	128
									2025	0.4	12		1924	0.6	18
10	0031	3.8	116	25	0023	3.4	104	10	0242	3.8	116	25	0139	3.5	107
W	0618	0.5	15	Th	0607	1.0	30	Sa	0830	0.7	21	Su	0728	0.8	24
	1307	5.1	155		1249*	4.4	134		1504	4.5	137		1355	4.1	125
	1935	0.6	18		1917	1.1	34		2124	0.4	12		2014	0.5	15
11	0142	3.7	113	26	0116	3.4	104	11	0349	4.0	122	26	0234	3.8	116
Th	0727	0.7	21	F	0703	1.1	34	Su	0943	0.6	18	M	0832	0.7	21
	1417	4.9	149		1343	4.3	131		1606	4.3	131		1451	4.0	122
	2045	0.7	21		2011	1.0	30		2218	0.4	12		2105	0.3	9
12	0257	3.7	113	27	0215	3.5	107	12	0446	4.2	128	27	0332	4.1	125
F	0843	0.7	21	Sa	0804	1.0	30	M	1047	0.6	18	Tu	0935	0.5	15
	1527	4.8	146		1439	4.3	131		1703	4.2	128		1546	4.0	122
	2153	0.6	18		2103	0.9	27		2307	0.3	9		2155	0.1	3
13	0409	3.9	119	28	0313	3.7	113	13	0539	4.5	137	28	0426	4.5	137
Sa	0956	0.7	21	Su	0907	0.9	27	Tu	1144	0.4	12	W	1038	0.2	6
	1633	4.7	143		1534	4.4	134		1754	4.1	125		1644	4.0	122
	2250	0.5	15		2153	0.7	21		2349	0.2	6		2246	-0.1	-3
14	0510	4.2	128	29	0409	4.0	122	14	0621	4.7	143	29	0519	4.9	149
Su	1100	0.6	18	M	1007	0.7	21	W	1231	0.3	9	Th	1134	0.0	0
	1731	4.7	143		1630	4.4	134		1838	4.0	122		1740	4.0	122
	2339	0.4	12		22:9	0.4	12						2335	0.3	-9
15	0601	4.5	137	30	0502	4.4	134	15	0029	0.2	6	30	0611	5.3	162
M	1158	0.4	12	Tu	1103	0.4	12	Th	0659	4.8	146	F	1229	-0.3	-9
	1821	4.7	143		1721	4.5	137		1315	0.2	6		1833	4.0	122
					2325	0.1	3		1917	3.9	119				
				31	0550	4.9	149								
				W	1158	0.1	3								
					1812	4.5	137								

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JANUARY				FEBRUARY				MARCH			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
Day	h m ft cm	Day	h m ft cm	Day	h m ft cm	Day	h m ft cm	Day	h m ft cm	Day	h m ft cm
1 0123 5.0 152		16 0244 5.2 158		1 0248 5.7 174		16 0327 5.4 165		1 0142 6.2 189		16 0159 5.7 174	
M 0816 0.0 0		Tu 0911 0.1 3		Th 0957 0.1 3		F 1005 0.4 12		Th 0850 -0.2 -6		F 0846 0.3 9	
1341 5.8 177		1459 5.3 162		1514 5.2 158		1549 4.9 149		1406 5.4 165		1421 5.1 155	
2049 0.1 3		2133 0.2 6		2207 0.2 6		2208 0.4 12		2056 0.1 3		2040 0.5 15	
2 0208 5.2 158		17 0331 5.2 158		2 0351 5.7 174		17 0415 5.3 162		2 0235 6.1 186		17 0232 5.6 171	
Tu 0909 0.2 6		W 0957 0.3 9		F 1058 0.3 9		Sa 1055 0.5 15		F 0946 0.0 0		Sa 0928 0.5 15	
1429 5.6 171		1546 5.2 158		1619 4.8 146		1641 4.7 143		1506 5.1 155		1459 4.9 149	
2136 0.1 3		2213 0.3 9		2305 0.3 9		2257 0.5 15		2151 0.3 9		2122 0.6 18	
3 0304 5.3 162		18 0421 5.2 158		3 0459 5.6 171		18 0509 5.3 162		3 0338 5.9 180		18 0312 5.6 171	
W 1008 0.3 9		Th 1045 0.4 12		Sa 1203 0.3 9		Su 1150 0.6 18		Sa 1045 0.2 6		Su 1016 0.6 18	
1526 5.4 165		1638 5.0 152		1731 4.6 140		1740 4.6 140		1613 4.8 146		1549 4.8 146	
2226 0.2 6		2258 0.3 9				2352 0.5 15		2251 0.5 15		2209 0.7 21	
4 0406 5.4 165		19 0514 5.2 158		4 0011 0.3 9		19 0607 5.3 162		4 0447 5.7 174		19 0405 5.5 168	
Th 1111 0.4 12		F 1138 0.4 12		Su 0609 5.6 171		M 1249 0.5 15		Su 1149 0.3 9		M 1110 0.7 21	
1630 5.1 155		1733 4.8 146		1310 0.2 6		1839 4.5 137		1724 4.7 143		1645 4.7 143	
2324 0.2 6		2347 0.3 9		1841 4.5 137				2357 0.5 15		2307 0.7 21	
5 0515 5.5 168		20 0607 5.2 158		5 0118 0.2 6		20 0052 0.4 12		5 0557 5.6 171		20 0505 5.5 168	
F 1218 0.3 9		Sa 1233 0.4 12		M 0717 5.6 171		Tu 0706 5.4 165		M 1253 0.4 12		Tu 1206 0.7 21	
1741 4.8 146		1829 4.7 143		1414 0.3 3		1348 0.4 12		1832 4.7 143		1750 4.7 143	
				1949 4.6 140		1935 4.6 140					
6 0027 0.2 6		21 0040 0.3 9		6 0223 0.0 0		21 0152 0.2 6		6 0103 0.4 12		21 0010 0.7 21	
Sa 0626 5.6 171		Su 0700 5.3 162		Tu 0818 5.7 174		W 0759 5.5 168		Tu 0702 5.6 171		W 0611 5.6 171	
1326 0.2 6		1330 0.3 9		1515 -0.1 -3		1444 0.2 6		1355 0.3 9		1307 0.7 21	
1853 4.6 140		1922 4.6 140		2048 4.7 143		2029 4.7 143		1935 4.9 149		1851 4.8 146	
7 0132 0.1 3		22 0134 0.1 3		7 0322 -0.2 -6		22 0249 0.1 3		7 0207 0.2 6		22 0115 0.6 18	
Su 0730 5.7 174		M 0751 5.4 165		W 0916 5.8 177		Th 0848 5.7 174		W 0803 5.7 174		Th 0713 5.7 174	
1431 -0.1 -3		1426 0.1 3		1609 -0.3 -9		1536 0.0 0		1453 0.1 3		1404 0.5 15	
1959 4.6 140		2017 4.6 140		2143 4.9 149		2117 4.9 149		2033 5.1 155		1949 5.1 155	
8 0236 -0.1 -3		23 0229 0.0 0		8 0417 -0.4 -12		23 0344 -0.1 -3		8 0305 0.0 0		23 0218 0.4 12	
M 0833 5.8 177		Tu 0841 5.5 168		Th 1009 5.8 177		F 0934 5.8 177		Th 0858 5.8 177		F 0807 5.8 177	
1532 -0.3 -9		1520 -0.1 -3		1659 -0.4 -12		1625 -0.1 -3		1545 0.0 0		1500 0.3 9	
2100 4.6 140		2105 4.6 140		2233 5.1 155		2203 5.2 158		2126 5.4 165		2042 5.4 165	
9 0337 -0.3 -9		24 0322 -0.2 -6		9 0507 -0.5 -15		24 0437 -0.3 -9		9 0358 -0.2 -6		24 0318 0.1 3	
Tu 0929 5.9 180		W 0927 5.6 171		F 1055 5.8 177		Sa 1020 5.9 180		F 0948 5.8 177		Sa 0900 5.9 180	
1627 -0.5 -15		1611 -0.2 -6		1744 -0.4 -12		1711 -0.3 -9		1632 -0.1 -3		1551 0.1 3	
2156 4.7 143		2150 4.6 140		2321 5.3 162		2246 5.4 165		2214 5.6 171		2132 5.7 174	
10 0432 -0.5 -15		25 0410 -0.3 -9		10 0553 -0.5 -15		25 0527 -0.4 -12		10 0447 -0.3 -9		25 0414 -0.2 -6	
W 1022 5.9 180		Th 1009 5.7 174		Sa 1140 5.8 177		Su 1102 6.0 183		Sa 1033 5.8 177		Su 0950 5.9 180	
1720 -0.6 -18		1658 -0.3 -9		1825 -0.3 -9		1755 -0.3 -9		1715 -0.1 -3		1638 -0.1 -3	
2248 4.8 146		2231 4.7 143				2328 5.7 174		2258 5.7 174		2217 6.1 186	
11 0525 -0.6 -18		26 0459 -0.4 -12		11 0004 5.4 165		26 0617 -0.5 -15		11 0531 -0.3 -9		26 0509 -0.4 -12	
Th 1113 5.9 180		F 1048 5.8 177		Su 0636 -0.4 -12		M 1144 6.0 183		Su 1115 5.8 177		M 1038 5.9 180	
1807 -0.6 -18		1742 -0.4 -12		1222 5.7 174		1839 -0.3 -9		1753 -0.1 -3		1725 -0.2 -6	
2339 4.9 149		2309 4.9 149		1903 -0.2 -6				2340 5.8 177		2304 6.3 192	
12 0614 -0.6 -18		27 0546 -0.4 -12		12 0046 5.4 165		27 0009 6.0 183		12 0612 -0.3 -9		27 0600 -0.5 -15	
F 1200 5.9 180		Sa 1126 5.9 180		M 0718 -0.2 -6		Tu 0706 -0.4 -12		M 1157 5.7 174		Tu 1124 5.9 180	
1852 -0.5 -15		1824 -0.3 -9		1300 5.6 171		1229 5.8 177		1829 0.1 3		1811 -0.2 -6	
		2350 5.1 155		1937 0.0 0		1921 -0.2 -6				2350 6.5 198	
13 0026 5.0 152		28 0632 -0.4 -12		13 0126 5.5 168		28 0054 6.1 186		13 0017 5.8 177		28 0651 -0.5 -15	
Sa 0659 -0.5 -15		Su 1205 5.9 180		Tu 0758 -0.1 -3		W 0757 -0.3 -9		Tu 0652 -0.1 -3		W 1214 5.7 174	
1245 5.8 177		1904 -0.3 -9		1339 5.5 168		1315 5.6 171		1232 5.5 168		1859 -0.1 -3	
1935 -0.4 -12				2014 0.2 6		2007 -0.1 -3		1902 0.2 6			
14 0113 5.1 155		29 0027 5.3 162		14 0204 5.5 168				14 0053 5.8 177		29 0036 6.6 201	
Su 0744 -0.3 -9		M 0719 -0.3 -9		W 0837 0.1 3				W 0730 0.0 0		Th 0743 -0.4 -12	
1330 5.6 171		1244 5.9 180		1421 5.3 162				1309 5.4 165		1305 5.5 168	
2014 -0.2 -6		1946 -0.2 -6		2048 0.3 9				1934 0.3 9		1948 0.0 0	
15 0200 5.1 155		30 0110 5.5 168		15 0245 5.4 165				15 0126 5.7 174		30 0128 6.5 198	
M 0827 -0.1 -3		Tu 0809 -0.2 -6		Th 0920 0.3 9				Th 0808 0.2 6		F 0838 -0.2 -6	
1414 5.5 168		1329 5.7 174		1501 5.1 155				1345 5.2 158		1358 5.3 162	
2053 0.0 0		2028 -0.1 -3		2125 0.4 12				2008 0.4 12		2040 0.2 6	
		31 0155 5.7 174								31 0224 6.3 192	
		W 0901 0.0 0								Sa 0933 0.0 0	
		1416 5.5 168								1459 5.1 155	
		2114 0.1 3								2136 0.4 12	

Time meridian 75° W. 0000 is midnight. 1200 is noon.
 Heights are referred to mean lower low water which is the chart datum of soundings.

APRIL

MAY

JUNE

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY								AUGUST								SEPTEMBER															
Time				Height				Time				Height				Time				Height				Time				Height			
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm		
1	0007	1.0	30		16	0452	5.4	165		1	0116	1.0	30		16	0141	0.8	24		1	0226	0.8	24		16	0319	0.4	12			
Su	0557	5.6	171		M	1451	0.7	21		W	0707	5.1	155		Th	0711	5.0	152		Sa	0815	5.1	155		Su	0900	5.6	171			
	1219	0.7	21			1744	6.3	192			1317	0.7	21			1344	0.6	18			1429	0.6	18			1530	0.2	6			
	1835	6.1	186								1938	6.1	186			1944	6.4	195			2036	6.3	192			2120	6.4	195			
2	0101	0.9	27		17	0050	0.9	27		2	0210	0.8	24		17	0244	0.6	18		2	0318	0.6	18		17	0409	0.2	6			
M	0652	5.4	165		Tu	0607	5.1	155		Th	0759	5.1	155		F	0815	5.1	155		Su	0902	5.3	162		M	0951	5.9	186			
	1308	0.6	18			1247	0.6	18			1410	0.6	18			1448	0.4	12			1522	0.4	12			1623	0.1	12			
	1927	6.2	189			1853	6.4	195			2026	6.2	189			2044	6.5	198			2120	6.4	195			2209	6.4	195			
3	0155	0.7	21		18	0156	0.7	21		3	0305	0.6	18		18	0342	0.3	9		3	0406	0.4	12		18	0453	0.1	3			
Tu	0743	5.3	162		W	0719	5.0	152		F	0849	5.1	155		Sa	0914	5.3	162		M	0947	5.5	168		Tu	1036	6.0	183			
	1359	0.5	15			1355	0.5	15			1502	0.4	12			1547	0.2	6			1614	0.3	9			1711	0.1	3			
	2015	6.2	189			1956	6.5	198			2113	6.3	192			2139	6.5	198			2202	6.5	198			2254	6.3	192			
4	0247	0.5	15		19	0300	0.5	15		4	0355	0.4	12		19	0435	0.1	3		4	0450	0.2	6		19	0536	0.1	3			
W	0834	5.2	158		Th	0823	5.0	152		Sa	0937	5.1	155		Su	1007	5.6	171		Tu	1028	5.7	174		W	1120	6.1	186			
	1447	0.4	12			1500	0.3	9			1551	0.3	9			1640	0.1	3			1703	0.2	6			1754	0.1	3			
	2102	6.3	192			2057	6.6	201			2155	6.4	195			2228	6.6	201			2241	6.5	198			2334	6.1	186			
5	0338	0.4	12		20	0358	0.2	6		5	0441	0.3	9		20	0522	0.1	3		5	0533	0.2	6		20	0613	0.2	6			
Th	0922	5.1	155		F	0924	5.1	155		Su	1020	5.2	158		M	1057	5.8	177		W	1107	6.0	183		Th	1200	6.2	6			
	1534	0.3	9			1600	0.2	6			1639	0.3	9			1730	0.1	3			1752	0.1	3			1836	0.2	6			
	2145	6.3	192			2153	6.6	201			2232	6.5	198			2315	6.5	198			2320	6.4	195								
6	0425	0.2	6		21	0453	0.0	0		6	0523	0.2	6		21	0606	0.1	3		6	0615	0.1	3		21	0015	5.9	180			
F	1006	5.0	152		Sa	1022	5.3	162		M	1058	5.3	162		Tu	1144	5.9	180		Th	1147	6.2	189		F	0648	0.4	12			
	1620	0.3	9			1656	0.1	3			1725	0.3	9			1817	0.2	6			1839	0.2	6			1239	6.1	186			
	2225	6.3	192			2246	6.7	204			2309	6.5	198			2359	6.4	195							1915	0.4	12				
7	0510	0.2	6		22	0544	-0.1	-3		7	0604	0.2	6		22	0645	0.2	6		7	0001	6.3	192		22	0052	5.7	174			
Sa	1048	5.0	152		Su	1115	5.4	165		Tu	1135	5.5	168		W	1228	6.0	183		F	0657	0.2	6		Sa	0723	0.5	15			
	1705	0.3	9			1747	0.0	0			1810	0.3	9			1902	0.3	9			1228	6.4	195			1315	6.0	183			
	2301	6.3	192			2335	6.6	201			2344	6.5	198								1929	0.3	9			1957	0.6	18			
8	0552	0.2	6		23	0632	-0.1	-3		8	0645	0.3	9		23	0041	6.2	189		8	0044	6.1	186		23	0130	5.5	168			
Su	1126	5.0	152		M	1205	5.6	171		W	1212	5.7	174		Th	0724	0.3	9		Sa	0738	0.3	9		Su	0757	0.6	18			
	1747	0.4	12			1838	0.1	3			1855	0.4	12			1311	6.0	183			1313	6.5	198			1353	5.9	180			
	2334	6.4	195													1945	0.5	15			2020	0.4	12			2035	0.8	24			
9	0633	0.3	9		24	0022	6.5	198		9	0021	6.5	198		24	0123	6.0	183		9	0131	5.8	177		24	0209	5.3	162			
M	1200	5.1	155		Tu	0716	0.0	0		Th	0723	0.3	9		F	0801	0.5	15		Su	0824	0.4	12		M	0832	0.7	21			
	1828	0.5	15			1256	5.7	174			1246	6.0	183			1353	6.0	183			1401	6.5	198			1430	5.9	180			
						1926	0.3	9			1942	0.6	18			2026	0.7	21			2115	0.6	18			2117	0.9	27			
10	0005	6.4	195		25	0108	6.4	195		10	0059	6.3	192		25	0205	5.8	177		10	0225	5.5	168		25	0251	5.2	158			
Tu	0712	0.4	12		W	0758	0.2	6		F	0801	0.4	12		Sa	0838	0.7	21		M	0915	0.6	18		Tu	0912	0.8	24			
	1233	5.2	158			1342	5.8	177			1328	6.2	189			1435	6.0	183			1501	6.4	195			1515	5.8	177			
	1910	0.6	18			2013	0.5	15			2032	0.7	21			2109	0.9	27			2213	0.8	24			2205	1.1	34			
11	0038	6.4	195		26	0153	6.2	189		11	0142	6.1	186		26	0247	5.6	171		11	0328	5.2	158		26	0339	5.0	152			
W	0749	0.4	12		Th	0840	0.4	12		Sa	0843	0.5	15		Su	0915	0.8	24		Tu	1015	0.7	21		W	0959	0.9	27			
	1307	5.5	168			1429	5.9	180			1418	6.3	192			1521	5.9	180			1608	6.2	189			1607	5.8	177			
	1953	0.7	21			2059	0.7	21			2126	0.9	27			2154	1.1	34			2316	0.9	27			2257	1.1	34			
12	0115	6.4	195		27	0241	6.0	183		12	0232	5.8	177		27	0336	5.4	165		12	0440	5.0	152		27	0436	4.9	149			
Th	0827	0.5	15		F	0919	0.6	18		Su	0931	0.6	18		M	0957	0.8	24		W	1119	0.8	24		Th	1053	0.9	27			
	1348	5.7	174			1518	5.9	180			1514	6.3	192			1610	5.9	180			1719	6.1	186			1703	5.8	177			
	2042	0.9	27			2146	0.9	27			2226	1.0	30			2244	1.1	34								2354	1.1	34			
13	0157	6.3	192		28	0328	5.8	177		13	0333	5.5	168		28	0429	5.2	158		13	0021	0.9	27		28	0538	4.9	149			
F	0905	0.6	18		Sa	1000	0.7	21		M	1024	0.7	21		Tu	1044	0.9	27		Th	0554	5.0	152		F	1154	0.9	27			
	1435	5.9	180			1608	5.9	180			1618	6.3	192			1704	5.9	180			1227	0.8	24			1804	5.9	180			
	2137	1.0	30			2234	1.0	30			2329	1.0	30			2338	1.2	37			1829	6.1	186								
14	0246	6.1	186		29	0421	5.6	171		14	0445	5.2	158		29	0527	5.1	155		14	0125	0.8	24		29	0050	1.0	30			
Sa	0951	0.6	18		Su	1044	0.8	24		Tu	1128	0.8	24		W	1136	0.9	27		F	0703	5.1	155		Sa	0638	5.0	152			
	1533	6.1	186			1701	6.0	183			1730	6.2	189			1800	5.9	180			1332	0.6	18			1254	0.8	24			
	2236	1.1	34			2325	1.1	34													1932	6.2	189			1900	6.0	183			
15	0346	5.7	174		30	0515	5.4	165		15	0035	1.0	30		30	0035	1.1	34		15	0225	0.6	18		30	0146	0.8	24			
Su	1041	0.6	18		M	1132	0.8	24		W	0558	5.0	152		Th	0625	5.0	152		Sa	0805	5.4	165		Su	0735	5.2	158			
	1635	6.2	189			1754	6.0	183			1237	0.8	24			1233	0.8	24			1434	0.4	12			1354	0.6	18			
	2342	1.1	34								1840	6.3	192			1855	6.0	183			2029	6.3	192								

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER								NOVEMBER								DECEMBER													
Time Height				Time Height				Time Height				Time Height				Time Height				Time Height									
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm
1	0237	0.6	18		16	0339	0.2	6		1	0339	-0.1	-3		16	0430	-0.1	-3		1	0404	-0.4	-12		16	0440	-0.3	-9	
M	0825	5.5	168		Tu	0927	6.0	183		Th	0926	6.2	189		F	1028	6.0	183		Sa	0953	6.3	192		Su	1041	5.7	174	
	1453	0.4	12			1600	0.0	0			1620	-0.3	-9			1705	-0.2	-6			1656	-0.6	-18			1722	-0.3	-9	
	2041	6.2	189			2145	6.0	183			2147	5.7	174			2246	5.2	158			2219	5.1	155			2302	4.7	143	
2	0327	0.3	9		17	0423	0.1	3		2	0429	-0.2	-6		17	0509	-0.1	-3		2	0459	-0.6	-18		17	0519	-0.3	-9	
Tu	0913	5.8	177		W	1013	6.1	186		F	1015	6.5	198		Sa	1107	5.9	180		Su	1046	6.4	195		M	1120	5.6	171	
	1547	0.2	6			1646	-0.1	-3			1713	-0.4	-12			1747	-0.2	-6			1751	-0.7	-21			1801	-0.3	-9	
	2127	6.2	189			2227	5.9	180			2236	5.6	171			2325	5.0	152			2313	5.0	152			2340	4.6	140	
3	0414	0.1	3		18	0502	0.1	3		3	0520	-0.3	-9		18	0547	0.0	0		3	0553	-0.6	-18		18	0558	-0.2	-6	
W	0956	6.1	186		Th	1054	6.1	186		Sa	1102	6.6	201		Su	1143	5.8	177		M	1138	6.3	192		Tu	1152	5.6	171	
	1641	0.0	0			1731	-0.1	-3			1807	-0.5	-15			1826	-0.1	-3			1844	-0.7	-21			1841	-0.2	-6	
	2212	6.2	189			2309	5.7	174			2326	5.4	165																
4	0500	0.0	0		19	0541	0.1	3		4	0611	-0.3	-9		19	0001	4.9	149		4	0006	5.0	152		19	0012	4.5	137	
Th	1040	6.4	195		F	1133	6.1	186		Su	1152	6.6	201		M	0622	0.0	0		Tu	0647	-0.6	-18		W	0635	-0.1	-3	
	1732	-0.1	-3			1811	0.0	0			1900	-0.5	-15			1217	5.7	174			1231	6.3	192			1224	5.6	171	
	2258	6.1	186			2348	5.5	168							1904	0.1	3			1937	-0.6	-18			1917	0.0	0		
5	0545	-0.1	-3		20	0616	0.2	6		5	0018	5.3	162		20	0035	4.7	143		5	0102	5.0	152		20	0042	4.6	140	
F	1124	6.6	201		Sa	1209	6.0	183		M	0702	-0.3	-9		Tu	0657	0.1	3		W	0741	-0.4	-12		Th	0711	0.0	0	
	1823	-0.2	-6			1850	0.2	6			1244	6.5	198			1246	5.7	174			1326	6.1	186			1251	5.7	174	
	2343	5.9	180								1953	-0.3	-9			1941	0.2	6			2027	-0.4	-12			1953	0.1	3	
6	0631	0.0	0		21	0025	5.3	162		6	0113	5.1	155		21	0107	4.6	140		6	0200	5.0	152		21	0110	4.7	143	
Sa	1209	6.6	201		Su	0649	0.3	9		Tu	0755	-0.1	-3		W	0731	0.2	6		Th	0836	-0.2	-6		F	0750	0.1	3	
	1914	-0.1	-3			1244	5.9	180			1339	6.3	192			1316	5.7	174			1422	5.9	180			1324	5.7	174	
						1928	0.4	12			2046	-0.1	-3			2019	0.4	12			2120	-0.2	-6			2029	0.2	6	
7	0029	5.7	174		22	0100	5.1	155		7	0212	5.0	152		22	0137	4.7	143		7	0259	5.0	152		22	0142	4.9	149	
Su	0718	0.1	3		M	0723	0.4	12		W	0851	0.1	3		Th	0809	0.3	9		F	0931	0.0	0		Sa	0832	0.2	6	
	1256	6.6	201			1315	5.8	177			1438	6.1	186			1350	5.7	174			1520	5.7	174			1401	5.7	174	
	2006	0.1	3			2006	0.5	15			2141	0.1	3			2059	0.5	15			2211	0.0	0			2107	0.3	9	
8	0121	5.5	168		23	0134	5.0	152		8	0315	5.0	152		23	0212	4.7	143		8	0400	5.1	155		23	0224	5.0	152	
M	0810	0.2	6		Tu	0758	0.5	15		Th	0950	0.3	9		F	0851	0.5	15		Sa	1029	0.1	3		Su	0920	0.3	9	
	1350	6.5	198			1347	5.8	177			1541	5.9	180			1430	5.7	174			1618	5.6	171			1446	5.6	171	
	2103	0.3	9			2045	0.7	21			2239	0.3	9			2140	0.6	18			2303	0.1	3			2148	0.3	9	
9	0219	5.2	158		24	0209	4.9	149		9	0421	5.0	152		24	0254	4.8	146		9	0458	5.3	162		24	0315	5.2	158	
Tu	0906	0.4	12		W	0837	0.6	18		F	1051	0.4	12		Sa	0943	0.5	15		Su	1125	0.2	6		M	1016	0.4	12	
	1451	6.3	192			1424	5.8	177			1645	5.8	177			1517	5.7	174			1717	5.4	165			1538	5.4	165	
	2200	0.5	15			2130	0.8	24			2336	0.3	9			2226	0.6	18			2355	0.2	6			2234	0.3	9	
10	0325	5.1	155		25	0248	4.8	146		10	0524	5.2	158		25	0351	5.0	152		10	0556	5.4	165		25	0416	5.4	165	
W	1005	0.6	18		Th	0923	0.7	21		Sa	1152	0.4	12		Su	1041	0.6	18		M	1223	0.3	9		Tu	1120	0.4	12	
	1557	6.1	186			1509	5.7	174			1748	5.7	174			1616	5.6	171			1814	5.3	162			1639	5.2	158	
	2301	0.6	18			2216	0.9	27							2318	0.5	15								2329	0.2	6		
11	0436	5.0	152		26	0339	4.8	146		11	0033	0.4	12		26	0455	5.1	155		11	0046	0.2	6		26	0521	5.5	168	
Th	1108	0.7	21		F	1014	0.8	24		Su	0626	5.4	165		M	1145	0.6	18		Tu	0651	5.5	168		W	1227	0.4	12	
	1706	6.0	183			1605	5.7	174			1253	0.4	12			1718	5.4	165			1319	0.2	6			1749	4.9	149	
						2310	0.9	27			1848	5.7	174								1909	5.2	158						
12	0002	0.7	21		27	0442	4.8	146		12	0127	0.3	9		27	0013	0.4	12		12	0137	0.1	3		27	0031	0.1	3	
F	0544	5.1	155		Sa	1113	0.8	24		M	0722	5.6	171		Tu	0603	5.4	165		W	0742	5.7	174		Th	0632	5.6	171	
	1213	0.7	21			1705	5.7	174			1351	0.2	6			1253	0.4	12			1414	0.0	0			1336	0.2	6	
	1813	6.0	183								1941	5.6	171			1823	5.3	162			2000	5.1	155			1857	4.8	146	
13	0102	0.6	18		28	0006	0.8	24		13	0217	0.2	6		28	0111	0.2	6		13	0227	0.0	0		28	0137	0.0	0	
Sa	0648	5.3	162		Su	0548	5.0	152		Tu	0813	5.8	177		W	0704	5.6	171		Th	0833	5.7	174		F	0736	5.8	177	
	1317	0.5	15			1219	0.7	21			1444	0.1	3			1357	0.2	6			1505	-0.1	-3			1441	-0.1	-3	
	1912	6.0	183			1808	5.7	174			2031	5.6	171			1927	5.2	158			2049	5.1	155			2004	4.7	143	
14	0159	0.4	12		29	0059	0.7	21		14	0305	0.1	3		29	0210	0.0	0		14	0313	-0.1	-3		29	0244	-0.2	-6	
Su	0746																												

Times and Heights of High and Low Waters

JANUARY								FEBRUARY								MARCH							
Time		Height		Time		Height		Time		Height		Time		Height		Time		Height					
Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm	Day	h m	ft	cm				
1	0419	5.5	168	16	0520	5.7	174	1	0024	-0.2	-6	16	0034	0.2	6	1	0422	6.7	204				
M	1128	0.1	3	Tu	1210	0.3	9	Th	0536	6.1	186	F	0615	5.7	174	Th	1148	-0.1	-3				
	1629	6.3	192		1736	5.9	180		1259	0.0	0		1311	0.2	6		1647	6.0	183				
									1758	5.6	171		1844	5.1	155								
2	0004	0.0	0	17	0034	0.1	3	2	0113	-0.2	-6	17	0116	0.1	3	2	0002	-0.1	-3				
Tu	0505	5.6	171	W	0610	5.7	174	F	0634	6.0	183	Sa	0707	5.5	168	F	0514	6.5	198				
	1218	0.1	3		1257	0.3	9		1355	0.0	0		1401	0.2	6		1242	-0.1	-3				
	1718	6.1	186		1827	5.6	171		1901	5.3	162		1939	4.9	149		1744	5.6	171				
3	0049	0.0	0	18	0116	0.1	3	3	0207	-0.2	-6	18	0205	0.1	3	3	0052	-0.1	-3				
W	0557	5.7	174	Th	0701	5.6	171	Sa	0735	6.0	183	Su	0803	5.4	165	Sa	0613	6.3	192				
	1314	0.2	6		1346	0.3	9		1456	0.1	3		1457	0.3	9		1339	0.0	0				
	1815	5.8	177		1921	5.3	162		2006	5.1	155		2035	4.7	143		1847	5.3	162				
4	0138	-0.1	-3	19	0201	0.0	0	4	0306	-0.1	-3	19	0257	0.1	3	4	0148	0.0	0				
Th	0657	5.8	177	F	0754	5.5	168	Su	0840	6.0	183	M	0858	5.5	168	Su	0717	6.1	186				
	1412	0.2	6		1439	0.2	6		1558	0.1	3		1553	0.3	9		1438	0.2	6				
	1919	5.6	171		2018	5.1	155		2111	5.0	152		2131	4.7	143		1951	5.1	155				
5	0230	-0.1	-3	20	0249	0.0	0	5	0407	-0.1	-3	20	0356	0.1	3	5	0248	0.1	3				
F	0758	6.0	183	Sa	0848	5.5	168	M	0942	6.0	183	Tu	0953	5.6	171	M	0822	6.0	183				
	1513	0.2	6		1533	0.2	6		1659	0.1	3		1650	0.3	9		1539	0.3	9				
	2022	5.3	162		2112	4.9	149		2212	5.1	155		2225	4.9	149		2057	5.2	158				
6	0327	-0.1	-3	21	0340	0.0	0	6	0508	0.0	0	21	0454	0.2	6	6	0349	0.2	6				
Sa	0859	6.1	186	Su	0941	5.6	171	Tu	1041	6.2	189	W	1046	5.8	177	Tu	0924	6.1	186				
	1617	0.2	6		1630	0.1	3		1800	0.1	3		1745	0.4	12		1639	0.3	9				
	2126	5.2	158		2206	4.8	146		2311	5.3	152		2315	5.1	155		2159	5.3	162				
7	0427	-0.1	-3	22	0435	0.0	0	7	0606	0.0	0	22	0550	0.2	6	7	0449	0.3	9				
Su	0959	6.3	192	M	1031	5.7	174	W	1137	6.4	195	Th	1134	6.1	186	W	1025	6.2	189				
	1718	0.1	3		1727	0.1	3		1855	0.1	3		1838	0.4	12		1738	0.4	12				
	2226	5.2	158		2300	4.8	146										2257	5.6	171				
8	0527	-0.1	-3	23	0529	0.0	0	8	0006	5.5	168	23	0001	5.4	165	8	0547	0.4	12				
M	1057	6.4	195	Tu	1121	5.8	177	Th	0702	0.1	3	F	0646	0.2	6	Th	1121	6.4	195				
	1820	0.0	0		1820	0.1	3		1230	6.5	198		1220	6.4	195		1830	0.4	12				
	2324	5.3	162		2347	4.9	149		1946	0.1	3		1927	0.3	9		2349	6.0	183				
9	0625	-0.1	-3	24	0622	0.0	0	9	0057	5.8	177	24	0045	5.8	177	9	0643	0.4	12				
Tu	1153	6.6	201	W	1208	6.0	183	F	0754	0.1	3	Sa	0736	0.1	3	F	1211	6.6	201				
	1915	-0.1	-3		1910	0.0	0		1318	6.7	204		1303	6.6	201		1920	0.5	15				
									2034	0.2	6		2015	0.3	9								
10	0019	5.4	165	25	0033	5.1	155	10	0145	6.0	183	25	0129	6.1	186	10	0039	6.3	192				
W	0720	-0.1	-3	Th	0712	0.0	0	Sa	0843	0.2	6	Su	0827	0.1	3	Sa	0733	0.5	15				
	1245	6.7	204		1251	6.2	189		1404	6.7	204		1345	6.7	204		1259	6.7	204				
	2008	-0.1	-3		1959	0.1	3		2117	0.2	6		2059	0.2	6		2005	0.5	15				
11	0113	5.6	171	26	0117	5.2	158	11	0231	6.1	186	26	0209	6.4	195	11	0124	6.5	198				
Th	0813	0.0	0	F	0801	0.0	0	Su	0929	0.3	9	M	0917	0.0	0	Su	0821	0.5	15				
	1336	6.7	204		1332	6.4	195		1450	6.6	201		1427	6.7	204		1342	6.7	204				
	2058	-0.1	-3		2044	0.1	3		2159	0.3	9		2143	0.1	3		2047	0.6	18				
12	0204	5.7	174	27	0156	5.4	165	12	0316	6.2	189	27	0251	6.6	201	12	0207	6.6	201				
F	0903	0.0	0	Sa	0849	0.0	0	M	1013	0.3	9	Tu	1007	-0.1	-3	M	0905	0.5	15				
	1424	6.7	204		1411	6.5	198		1533	6.4	195		1509	6.6	201		1424	6.6	201				
	2144	0.0	0		2128	0.0	0		2237	0.3	9		2227	0.0	0		2127	0.6	18				
13	0252	5.8	177	28	0236	5.6	171	13	0358	6.1	186	28	0335	6.7	204	13	0247	5.6	201				
Sa	0952	0.1	3	Su	0936	0.0	0	Tu	1056	0.4	12	W	1056	-0.1	-3	Tu	0948	0.5	15				
	1512	6.6	201		1450	6.5	198		1617	6.2	189		1557	6.3	192		1506	6.4	195				
	2229	0.1	3		2211	0.0	0		2317	0.3	9		2313	-0.1	-3		2203	0.6	18				
14	0342	5.8	177	29	0316	5.8	177	14	0441	6.0	183	29	0408	6.5	198	14	0328	6.5	198				
Su	1037	0.2	6	M	1024	0.0	0	W	1140	0.3	9	W	1029	0.4	12	W	1029	0.4	12				
	1559	6.5	198		1529	6.5	198		1703	5.8	177		1550	6.1	186		1550	6.1	186				
	2311	0.1	3		2253	-0.1	-3		2354	0.2	6		2241	0.6	18		2241	0.6	18				
15	0431	5.8	177	30	0357	6.0	183	15	0528	5.9	180	30	0408	6.4	195	15	0408	6.4	195				
M	1125	0.3	9	Tu	1113	-0.1	-3	Th	1223	0.3	9		1632	5.8	177	Th	1112	0.4	12				
	1646	6.2	189		1614	6.3	192		1751	5.5	168						1632	5.8	177				
	2353	0.2	6		2337	-0.1	-3										2317	0.5	15				
				31	0443	6.1	186																
				W	1204	0.0	0																
					1703	6.0	183																

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

APRIL

MAY

JUNE

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

AUGUST

SEPTEMBER

Time Height				Time Height				Time Height				Time Height				Time Height			
Day				Day				Day				Day				Day			
h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm	
1 0302	1.0	30		16 0246	0.8	24		1 0415	0.6	18		16 0430	0.6	18		1 0526	0.6	18	
Su 0834	5.9	180		M 0748	5.7	174		W 0951	5.3	162		Th 0941	5.5	168		Sa 1100	5.6	171	
1517	0.6	18		1453	0.4	12		1616	0.4	12		1634	0.4	12		1727	0.6	18	
2111	6.4	195		2029	6.6	201		2216	6.4	195		2210	6.9	210		2319	6.7	204	
2 0357	0.8	24		17 0347	0.7	21		2 0508	0.5	15		17 0529	0.5	15		2 0616	0.6	18	
M 0930	5.7	174		Tu 0854	5.6	171		Th 1043	5.4	165		F 1041	5.7	174		Su 1147	5.9	180	
1607	0.6	18		1553	0.4	12		1708	0.4	12		1734	0.4	12		1821	0.6	18	
2202	6.6	201		2128	6.8	207		2305	6.6	201		2307	7.1	216		1907	0.8	24	
3 0450	0.7	21		18 0449	0.6	18		3 0601	0.5	15		18 0625	0.5	15		3 0002	6.9	210	
Tu 1023	5.7	174		W 0956	5.6	171		F 1132	5.5	168		Sa 1137	6.0	183		M 0705	0.6	18	
1654	0.6	18		1653	0.4	12		1800	0.5	15		1832	0.5	15		1230	6.1	186	
2249	6.7	204		2227	7.1	216		2351	6.8	207						1913	0.6	18	
4 0542	0.5	15		19 0549	0.5	15		4 0650	0.5	15		19 0000	7.3	223		4 0044	7.0	213	
W 1113	5.7	174		Th 1055	5.7	174		Sa 1218	5.6	171		Su 0718	0.5	15		Tu 0749	0.6	18	
1745	0.5	15		1753	0.4	12		1850	0.5	15		1230	6.3	192		1310	6.4	195	
2336	6.8	207		2322	7.3	223						1927	0.6	18		2003	0.6	18	
5 0633	0.4	12		20 0647	0.4	12		5 0034	5.9	210		20 0049	7.4	226		5 0123	7.0	213	
Th 1201	5.7	174		F 1151	5.9	180		Su 0738	0.5	15		M 0808	0.5	15		W 0835	0.6	18	
1832	0.5	15		1849	0.4	12		1302	5.2	177		1319	6.6	201		1349	6.6	201	
6 0020	6.9	210		21 0016	7.4	226		1939	0.6	18		2017	0.8	24		2052	0.6	18	
F 0721	0.4	12		Sa 0740	0.3	9		6 0115	7.0	213		21 0138	7.4	226		6 0202	7.0	213	
1246	5.7	174		1245	6.1	186		M 0823	0.5	15		Tu 0854	0.6	18		Th 0919	0.6	18	
1919	0.6	18		1944	0.5	15		1341	5.9	130		1407	6.7	204		1428	6.8	207	
7 0102	6.9	210		22 0107	7.5	229		2026	0.7	21		2108	0.9	27		2142	0.6	18	
Sa 0807	0.4	12		Su 0831	0.3	9		7 0152	7.0	213		22 0224	7.2	219		7 0243	6.8	207	
1329	5.7	174		1337	6.3	192		Tu 0905	0.6	18		W 0938	0.7	21		F 1002	0.5	15	
2005	0.6	18		2037	0.6	18		1418	6.1	186		1453	6.7	204		1509	6.9	210	
8 0141	7.0	213		23 0157	7.5	229		2113	0.7	21		2154	1.0	30		2232	0.6	18	
Su 0851	0.5	15		M 0920	0.4	12		8 0227	7.0	213		23 0308	7.0	213		8 0326	6.5	198	
1409	5.7	174		1428	6.4	195		W 0949	0.6	18		Th 1020	0.8	24		Sa 1048	0.4	12	
2049	0.7	21		2128	0.7	21		1457	6.3	192		1539	6.7	204		1555	6.9	210	
9 0218	7.0	213		24 0245	7.4	226		2201	0.7	21		2240	1.0	30		2324	0.5	15	
M 0933	0.6	18		Tu 1006	0.5	15		9 0305	6.9	210		24 0355	6.6	201		9 0415	6.2	189	
1447	5.7	174		1519	6.5	198		Th 1031	0.5	15		F 1059	0.8	24		Su 1133	0.3	9	
2134	0.8	24		2217	0.9	27		1534	6.4	195		1624	6.5	198		1644	6.8	207	
10 0252	6.9	210		25 0332	7.1	216		2249	0.7	21		2327	1.0	30		2327	1.0	30	
Tu 1015	0.6	18		W 1052	0.6	18		10 0344	6.6	201		25 0443	6.2	189		10 0017	0.5	15	
1522	5.8	177		1608	6.5	198		F 1112	0.5	15		Sa 1140	0.8	24		M 0511	5.8	177	
2219	0.8	24		2305	1.0	30		1616	6.5	198		1712	6.4	195		1223	0.3	9	
11 0327	6.8	207		26 0422	6.8	207		2340	0.7	21						1741	6.7	204	
W 1057	0.6	18		Th 1135	0.6	18		11 0430	6.3	192		26 0012	0.9	27		11 0113	0.5	15	
1600	5.9	180		1700	6.4	195		Sa 1156	0.4	12		Su 0532	5.8	177		Tu 0613	5.5	168	
2306	0.9	27		2354	1.0	30		1703	6.5	198		1221	0.7	21		1319	0.3	9	
12 0404	6.7	204		27 0512	6.4	195		12 0032	0.7	21		1802	6.2	189		1845	6.6	201	
Th 1138	0.6	18		F 1218	0.6	18		Su 0522	6.0	183		27 0100	0.9	27		12 0211	0.5	15	
1641	6.0	183		1749	6.3	192		1244	0.3	9		M 0626	5.5	168		W 0719	5.4	165	
2355	0.9	27						1802	6.5	198		1303	0.6	18		1417	0.3	9	
13 0445	6.5	193		28 0044	1.0	30		13 0128	0.7	21		28 0150	0.8	24		1951	6.5	198	
F 1221	0.5	15		Sa 0607	6.1	186		M 0624	5.7	174		Tu 0722	5.3	162		13 0311	0.5	15	
1728	6.2	189		1301	0.6	18		1337	0.3	9		1351	0.5	15		Th 0825	5.4	165	
14 0047	0.9	27		1842	6.2	189		1903	6.5	198		1950	6.0	183		1517	0.4	12	
Sa 0538	6.2	189		29 0134	1.0	30		14 0228	0.6	18		29 0244	0.7	21		2055	6.6	201	
1307	0.4	12		Su 0703	5.7	174		Tu 0731	5.4	165		W 0820	5.2	158		14 0410	0.5	15	
1826	6.3	192		1347	0.6	18		1434	0.3	9		1442	0.5	15		F 0928	5.6	171	
15 0145	0.9	27		1938	6.2	189		2008	6.5	198		2046	6.1	186		1618	0.5	15	
Su 0639	5.9	180		30 0226	0.9	27		15 0329	0.6	18		30 0338	0.7	21		2155	6.8	207	
1359	0.4	12		M 0759	5.5	168		W 0837	5.4	165		Th 0916	5.2	158		15 0508	0.6	18	
1926	6.4	195		1434	0.5	15		1535	0.3	9		1537	0.5	15		Sa 1028	6.0	183	
				2031	6.2	189		2111	6.7	204		2140	6.2	189		1717	0.6	18	
				31 0320	0.7	21						31 0433	0.6	18		2250	7.0	213	
				Tu 0856	5.4	165						F 1009	5.3	162		30 0447	0.8	24	
				1923	0.5	15						1633	0.5	15		Su 1023	5.7	174	
				2124	6.3	192						2232	6.5	198		1656	0.7	21	

Time meridian 75° W. 0000 is midnight. 1200 is noon.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER								NOVEMBER								DECEMBER							
	Time		Height			Time		Height			Time		Height			Time		Height					
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm				
1	0539	0.8	24		16	0624	0.6	18		1	0640	0.5	15		16	0032	6.1	186					
M	1110	6.1	186		Tu	1152	6.8	207		Th	1206	7.0	213		F	0722	0.6	18					
	1753	0.7	21			1846	0.8	24			1918	0.4	12			1254	6.7	204					
	2327	6.8	207													1958	0.5	15					
2	0628	0.7	21		17	0008	6.8	207		2	0025	6.4	195		17	0115	5.9	180					
Tu	1155	6.5	198		W	0710	0.7	21		F	0731	0.4	12		Sa	0804	0.6	18					
	1847	0.7	21			1236	7.0	213			1251	7.3	223			1336	6.7	204					
						1936	0.8	24			2011	0.3	9			2043	0.4	12					
3	0011	6.9	210		18	0053	6.7	204		3	0114	6.4	195		18	0159	5.7	174					
W	0715	0.7	21		Th	0754	0.8	24		Sa	0821	0.2	6		Su	0845	0.6	18					
	1238	6.8	207			1319	7.0	213			1338	7.4	226			1415	6.6	201					
	1941	0.6	18			2023	0.8	24			2105	0.1	3			2125	0.4	12					
4	0053	6.9	210		19	0139	6.5	198		4	0202	6.2	189		19	0241	5.5	168					
Th	0803	0.6	18		F	0835	0.8	24		Su	0912	0.1	3		M	0924	0.5	15					
	1317	7.1	216			1401	6.9	210			1425	7.4	226			1455	6.4	195					
	2031	0.5	15			2108	0.8	24			2157	0.1	3			2207	0.4	12					
5	0138	6.8	207		20	0221	6.2	189		5	0254	6.1	186		20	0322	5.3	162					
F	0848	0.5	15		Sa	0914	0.8	24		M	1002	0.1	3		Tu	1005	0.5	15					
	1402	7.3	223			1440	6.8	207			1516	7.3	223			1534	6.3	192					
	2122	0.4	12			2150	0.7	21			2249	0.0	0			2249	0.4	12					
6	0224	6.6	201		21	0303	5.9	180		6	0348	5.9	180		21	0403	5.2	158					
Sa	0936	0.4	12		Su	0953	0.8	24		Tu	1054	0.1	3		W	1044	0.5	15					
	1446	7.3	223			1519	6.6	201			1611	7.1	216			1613	6.2	189					
	2214	0.3	9			2232	0.7	21			2341	0.1	3			2333	0.5	15					
7	0310	6.3	192		22	0346	5.6	171		7	0445	5.7	174		22	0445	5.1	155					
Su	1023	0.3	9		M	1031	0.7	21		W	1148	0.2	6		Th	1126	0.4	12					
	1534	7.2	219			1600	6.4	195			1709	6.8	207			1653	6.1	186					
	2306	0.3	9			2316	0.7	21															
8	0403	6.0	183		23	0432	5.4	165		8	0035	0.1	3		23	0015	0.5	15					
M	1113	0.2	6		Tu	1110	0.6	18		Th	0548	5.6	171		F	0531	5.1	155					
	1626	7.0	213			1643	6.2	189			1243	0.3	9			1212	0.4	12					
						2357	0.7	21			1810	6.6	201			1736	6.0	183					
9	0001	0.3	9		24	0518	5.2	158		9	0129	0.2	6		24	0059	0.5	15					
Tu	0459	5.7	174		W	1152	0.6	18		F	0651	5.6	171		Sa	0621	5.1	155					
	1205	0.2	6			1728	6.1	186			1341	0.4	12			1301	0.5	15					
	1725	6.8	207								1912	6.4	195			1828	6.0	183					
10	0055	0.3	9		25	0044	0.7	21		10	0224	0.3	9		25	0145	0.5	15					
W	0602	5.6	171		Th	0609	5.1	155		Sa	0755	5.8	177		Su	0712	5.3	162					
	1302	0.3	9			1237	0.6	18			1438	0.5	15			1356	0.5	15					
	1829	6.6	201			1821	6.0	183			2014	6.4	195			1922	5.9	180					
11	0151	0.4	12		26	0131	0.7	21		11	0319	0.3	9		26	0234	0.4	12					
Th	0706	5.5	168		F	0703	5.1	155		Su	0854	6.0	183		M	0807	5.6	171					
	1359	0.4	12			1329	0.6	18			1537	0.6	18			1455	0.6	18					
	1934	6.5	198			1916	6.0	183			2112	6.3	192			2021	5.8	177					
12	0250	0.4	12		27	0222	0.7	21		12	0411	0.4	12		27	0326	0.4	12					
F	0812	5.6	171		Sa	0758	5.2	158		M	0949	6.3	192		Tu	0859	5.9	180					
	1500	0.5	15			1426	0.7	21			1634	0.6	18			1557	0.6	18					
	2036	6.5	198			2014	6.1	186			2206	6.3	192			2118	5.8	177					
13	0346	0.5	15		28	0314	0.7	21		13	0502	0.4	12		28	0418	0.3	9					
Sa	0912	5.9	180		Su	0851	5.5	168		Tu	1040	6.5	198		W	0954	6.2	189					
	1559	0.6	18			1524	0.7	21			1730	0.6	18			1659	0.5	15					
	2135	6.6	201			2106	6.2	189			2257	6.3	192			2213	5.8	177					
14	0442	0.5	15		29	0407	0.7	21		14	0551	0.5	15		29	0513	0.3	9					
Su	1011	6.2	189		M	0943	5.9	180		W	1128	6.7	204		Th	1046	6.6	201					
	1658	0.7	21			1626	0.7	21			1822	0.6	18			1800	0.3	9					
	2231	6.7	204			2231	6.3	192			2345	6.2	189			2308	5.9	180					
15	0534	0.6	18		30	0458	0.7	21		15	0638	0.5	15		30	0608	0.2	6					
M	1103	6.5	198		Tu	1033	6.3	192		Th	1211	6.7	204		F	1136	6.9	210					
	1753	0.7	21			1725	0.7	21			1911	0.5	15			1856	0.2	6					
	2321	6.8	207			2250	6.4	195															
					31	0550	0.6	18															
					W	1119	6.7	204															
						1823	0.6	18															
						2339	6.4	195															

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JANUARY								FEBRUARY								MARCH														
Time Height				Time Height				Time Height				Time Height				Time Height				Time Height										
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	
1	0353	-0.1	-3		16	0425	-0.1	-3		1	0432	-0.3	-9		16	0448	-0.1	-3		1	0312	-0.2	-6		16	0319	0.0	0		
M	0935	0.7	21		Tu	1037	0.8	24		Th	1111	1.0	30		F	1142	0.9	27		Th	0952	1.3	40		F	1008	1.2	37		
	1527	-0.2	-6			1641	-0.1	-3			1727	0.0	0			1801	0.2	6			1618	0.0	0			1637	0.3	9		
	2200	1.1	34			2243	0.8	24			2305	0.7	21			2314	0.6	18			2154	0.8	24			2201	0.8	24		
2	0432	-0.1	-3		17	0504	-0.2	-6		2	0521	-0.3	-9		17	0534	-0.1	-3		2	0357	-0.2	-6		17	0358	0.1			
Tu	1032	0.8	24		W	1133	0.8	24		F	1216	1.1	34		Sa	1241	0.9	27		2	0952	1.3	40		Sa	1057	1.2	37		
	1627	-0.1	-3			1739	0.0	0			1841	0.1	3			1904	0.2	6			F	1051	1.3	40			1729	0.3	9	
	2243	1.0	30			2321	0.7	21			2354	0.6	18								1724	0.1	3			1729	0.3	9		
3	0513	-0.2	-6		18	0543	-0.2	-6		3	0614	-0.4	-12		18	0003	0.6	18		3	0449	-0.2	-6		18	0447	0.1	3		
W	1133	0.9	27		Th	1232	0.8	24		Sa	1329	1.1	34		Su	0628	-0.1	-3		Sa	1157	1.3	40		Su	1151	1.1	34		
	1734	0.0	0			1840	0.1	3			2003	0.1	3			1344	1.0	30			1836	0.2	6			1827	0.4	12		
	2331	0.8	24													2013	0.3	9			2342	0.7	21			2331	0.7	21		
4	0559	-0.2	-9		19	0003	0.6	18		4	0057	0.5	15		19	0102	0.5	15		4	0552	-0.2	-6		19	0539	0.1	3		
Th	1240	1.0	30		F	0629	-0.2	-6		Su	0714	-0.4	-12		M	0727	-0.1	-3		Su	1306	1.3	40		M	1250	1.1	34		
	1848	0.1	3			1333	0.9	27			1438	1.2	37			1445	1.0	30			1951	0.2	6			1929	0.4	12		
						1949	0.2	6			2121	0.1	3			2119	0.3	9												
5	0023	0.7	21		20	0048	0.5	15		5	0206	0.5	15		20	0208	0.5	15		5	0051	0.6	18		20	0039	0.7	21		
F	0645	-0.3	-9		Sa	0719	-0.2	-6		M	0821	-0.4	-12		Tu	0823	-0.1	-3			M	0701	-0.2	-6		Tu	0645	0.2	6	
	1348	1.1	34			1433	0.9	27			1544	1.2	37			1539	1.0	30			1419	1.3	40			1351	1.1	34		
	2008	0.1	3			2059	0.2	6			2229	0.1	3			2214	0.2	6			2102	0.2	6			2029	0.4	12		
6	0119	0.6	18		21	0139	0.5	15		6	0315	0.5	15		21	0312	0.6	18		6	0206	0.7	21		21	0148	0.8	24		
Sa	0742	-0.4	-12		Su	0808	-0.2	-6		Tu	0924	-0.4	-12			W	0922	-0.1	-3		Tu	0816	-0.1	-3			W	0752	0.2	6
	1453	1.2	37			1529	1.0	30			1644	1.3	40			1631	1.1	34			1526	1.3	40			1450	1.1	34		
	2129	0.1	3			2205	0.2	6			2322	0.0	0			2300	0.2	6			2203	0.2	6			2117	0.3	9		
7	0218	0.6	18		22	0236	0.5	15		7	0420	0.6	18		22	0408	0.6	18		7	0317	0.7	21		22	0253	0.9	27		
Su	0837	-0.4	-12		M	0857	-0.3	-9		W	1029	-0.4	-12		Th	1018	-0.2	-6			W	0925	-0.1	-3		Th	0900	0.1	3	
	1556	1.3	40			1621	1.0	30			1737	1.3	40			1714	1.1	34			1626	1.2	37			1543	1.2	37		
	2239	0.1	3			2300	0.2	6							2335	0.1	3			2250	0.2	6			2202	0.3	9			
8	0322	0.5	15		23	0335	0.5	15		8	0009	0.0	0		23	0500	0.7	21		8	0418	0.8	24		23	0349	1.0	30		
M	0934	-0.5	-15		Tu	0947	-0.3	-9		Th	0519	0.6	18			F	1106	-0.2	-6		Th	1031	-0.2	-6			F	0959	0.1	3
	1655	1.4	43			1706	1.1	34			1128	-0.4	-12			1753	1.1	34			1720	1.2	37			1631	1.2	37		
	2339	0.0	0			2345	0.1	3			1825	1.2	37								2332	0.1	3			2239	0.2	6		
9	0426	0.5	15		24	0429	0.5	15		9	0049	0.0	0		24	0009	0.0	0		9	0513	1.0	30		24	0440	1.1	34		
Tu	1031	-0.5	-15		W	1036	-0.3	-9		F	0611	0.7	21		Sa	0546	0.8	24			F	1128	-0.2	-6		Sa	1055	0.0	0	
	1749	1.4	43			1748	1.1	34			1221	-0.4	-12			1155	-0.2	-6			1803	1.1	34			1717	1.2	37		
											1910	1.2	37			1832	1.1	34								2318	0.1	3		
10	0036	0.0	0		25	0021	0.1	3		10	0125	0.0	0		25	0042	0.0	0		10	0007	0.1	3		25	0529	1.3	40		
W	0522	0.5	15		Th	0520	0.5	15		Sa	0658	0.8	24		Su	0633	1.0	30		Sa	0559	1.1	34		Su	1146	0.0	0		
	1127	-0.5	-15			1122	-0.3	-9			1311	-0.3	-9			1247	-0.3	-9			1219	-0.1	-3			1755	1.2	37		
	1839	1.4	43			1825	1.2	37			1949	1.1	34			1911	1.1	34			1841	1.1	34			2353	0.0	0		
11	0118	0.0	0		26	0100	0.0	0		11	0157	-0.1	-3		26	0118	-0.1	-3		11	0039	0.1	3		26	0612	1.4	43		
Th	0618	0.6	18		F	0604	0.6	18		Su	0744	0.9	27		M	0719	1.1	34		Su	0641	1.1	34		M	1239	0.0	0		
	1223	-0.5	-15			1207	-0.3	-9			1358	-0.3	-9			1335	-0.2	-6			1308	-0.1	-3			1837	1.1	34		
	1928	1.3	40			1903	1.2	37			2024	1.0	30			1948	1.1	34			1917	1.0	30							
12	0200	-0.1	-3		27	0130	0.0	0		12	0228	-0.1	-3		27	0153	-0.2	-6		12	0109	0.1	3		27	0033	0.0	0		
F	0712	0.6	18		Sa	0652	0.6	18		M	0830	0.9	27		Tu	0808	1.2	37			M	0723	1.2	37		Tu	0701	1.5	46	
	1316	-0.4	-12			1253	-0.4	-12			1444	-0.2	-6			1425	-0.2	-6				1350	0.0	0			1330	0.0	0	
	2011	1.2	37			1939	1.1	34			2056	0.9	27			2027	1.0	30			1949	0.9	27			1919	1.1	34		
13	0236	-0.1	-3		28	0203	-0.1	-3		13	0258	-0.1	-3		28	0232	-0.2	-6		13	0141	0.0	0		28	0111	-0.1	-3		
Sa	0803	0.7	21		Su	0738	0.7	21		Tu	0913	1.0	30		W	0858	1.3	40		Tu	0802	1.2	37			W	0750	1.6	49	
	1407	-0.4	-12			1341	-0.3	-9			1529	-0.1	-3			1521	-0.1	-3			1430	0.0	0			1421	0.0	0		
	2053	1.1	34			2017	1.1	34			2128	0.8	24			2109	0.9	27			2020	0.9	27			2002	1.0	30		
14	0316	-0.1	-3		29	0235	-0.2	-6		14	0334	-0.1	-3							14	0210	0.0	0		29	0154	-0.1	-3		
Su	0855	0.7	21		M	0826	0.8	24		W	0958	1.0	30							W	0844	1.2	37		Th	0842	1.7	52		
	1459	-0.3	-9			1430	-0.3	-9			1615	0.0	0								1509	0.1	3			1518	0.1	3		
	2132	1.0	30			2056	1.0	30			2200	0.7	21								2049	0.8	24			2047	1.0	30		
15	0350	-0.1	-3		30	0313	-0.2	-6		15	0409	-0.1	-3							15	0242	0.0	0		30	0239	-0.1	-3		
M	0944	0.8	24		Tu	0916	0.9	27		Th	1050	1.0	30							Th	0925	1.2	37		F	0934	1.7	52		
	1551	-0.2	-6			1524	-0.2	-6			1704	0.1	3								1551	0.2	6			1617	0.2	6		
	2211	0.9	27			2135	0.9	27			2235	0.7	21								2124	0.8	24			2139	0.9	27		
					31	0351	-0.3	-9																	31	0329	0.0	0		
						W	1012	1.0	30																Sa	1032	1.6	49		

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JUNE

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

AUGUST

SEPTENBER

SEPTEMBER																			
Time Height				Time Height				Time Height				Time Height				Time Height			
Day		h m ft cm		Day		h m ft cm		Day		h m ft cm		Day		h m ft cm		Day		h m ft cm	
1	0200	1.8	55	16	0118	1.9	58	1	0314	1.9	58	16	0307	2.1	64	1	0409	1.9	58
Su	0834	0.9	27	M	0746	0.9	27	W	1019	1.0	30	Th	1010	0.9	27	Sa	1057	0.9	27
	1314	1.2	37		1225	1.3	40		1414	1.2	37		1435	1.2	37		1602	1.3	40
	1930	0.5	15		1854	0.3	9		2025	0.6	18		2037	0.4	12		2149	0.6	18
2	0259	1.8	55	17	0223	2.0	61	2	0405	1.9	58	17	0409	2.2	67	2	0453	1.9	58
M	0949	0.9	27	Tu	0909	0.9	27	Th	1107	0.9	27	F	1105	0.8	24	Su	1132	0.8	24
	1404	1.1	34		1331	1.2	37		1522	1.1	34		1552	1.3	40		1654	1.4	43
	2016	0.5	15		1947	0.3	9		2117	0.6	18		2146	0.4	12		2244	0.6	18
3	0348	1.9	58	18	0322	2.1	64	3	0447	2.0	61	18	0502	2.2	67	3	0529	1.9	58
Tu	1048	0.9	27	W	1022	0.8	24	F	1149	0.9	27	Sa	1151	0.7	21	3	1201	0.7	21
	1502	1.1	34		1441	1.2	37		1626	1.2	37		1659	1.4	43		1741	1.5	46
	2101	0.5	15		2049	0.3	9		2208	0.6	18		2250	0.4	12		2335	0.6	18
4	0434	1.9	58	19	0421	2.2	67	4	0528	2.0	61	19	0551	2.1	64	4	0604	1.9	58
W	1140	0.8	24	Th	1124	0.8	24	Sa	1221	0.8	24	Su	1230	0.7	21	Tu	1232	0.6	18
	1555	1.1	34		1556	1.2	37		1719	1.2	37		1756	1.5	46		1828	1.6	49
	2146	0.5	15		2149	0.3	9		2258	0.6	18		2351	0.5	15				
5	0519	2.0	61	20	0515	2.3	70	5	0604	2.0	61	20	0637	2.0	61	5	0024	0.6	18
Th	1221	0.8	24	F	1213	0.7	21	Su	1253	0.7	21	M	1305	0.6	18	5	0040	1.8	55
	1650	1.1	34		1702	1.2	37		1805	1.2	40		1849	1.6	49		1301	0.5	15
	2232	0.5	15		2250	0.3	9		2347	0.6	18						1910	1.7	52
6	0556	2.0	61	21	0605	2.3	70	6	0639	2.0	61	21	0046	0.5	15	6	0111	0.6	18
F	1300	0.7	21	Sa	1301	0.6	18	M	1320	0.7	21	Tu	0715	1.9	58	6	0715	1.8	55
	1742	1.1	34		1805	1.3	40		1850	1.4	43		1337	0.6	18		1333	0.5	15
	2316	0.5	15		2349	0.4	12						1938	1.7	52		1955	1.8	55
7	0633	2.0	61	22	0654	2.2	67	7	0033	0.6	18	22	0138	0.6	18	7	0201	0.7	21
Sa	1332	0.7	21	Su	1337	0.6	18	Tu	0715	2.0	61	W	0752	1.8	55	F	0751	1.7	52
	1827	1.2	37		1859	1.4	43		1349	0.6	18		1409	0.6	18		1408	0.4	12
	2359	0.5	15						1933	1.5	46		2024	1.8	55		2044	1.9	58
8	0707	2.0	61	23	0048	0.4	12	8	0119	0.6	18	23	0227	0.7	21	8	0254	0.7	21
Su	1401	0.7	21	M	0738	2.1	64	W	0747	1.9	58	Th	0826	1.7	52	Sa	0829	1.6	49
	1911	1.2	37		1416	0.6	18		1419	0.6	18		1441	0.5	15		1444	0.3	9
					1954	1.5	46		2019	1.6	49		2109	1.8	55		2133	2.0	61
9	0041	0.6	18	24	0144	0.5	15	9	0207	0.7	21	24	0315	0.8	24	9	0355	0.8	24
M	0742	2.0	61	Tu	0820	2.0	61	Th	0819	1.8	55	F	0858	1.6	49	Su	0908	1.5	46
	1431	0.6	18		1451	0.5	15		1447	0.5	15		1513	0.5	15		1527	0.3	9
	1954	1.3	40		2045	1.6	49		2106	1.7	52		2155	1.8	55		2228	2.0	61
10	0127	0.6	18	25	0239	0.6	18	10	0300	0.7	21	25	0406	0.9	27	10	0457	0.9	27
Tu	0814	1.9	58	W	0858	1.9	58	F	0855	1.7	52	Sa	0927	1.5	46	M	0956	1.4	43
	1458	0.6	18		1526	0.5	15		1522	0.4	12		1549	0.5	15		1612	0.3	9
	2040	1.4	43		2139	1.6	49		2155	1.8	55		2247	1.8	55		2331	2.1	64
11	0212	0.6	18	26	0333	0.7	21	11	0357	0.8	24	26	0501	1.0	30	11	0614	0.9	27
W	0848	1.9	58	Th	0937	1.7	52	Sa	0933	1.6	49	Su	1002	1.4	43	Tu	1049	1.3	40
	1529	0.5	15		1601	0.5	15		1658	0.4	12		1624	0.5	15		1705	0.4	12
	2129	1.5	46		2230	1.7	52		2251	1.9	58		2339	1.8	55				
12	0308	0.7	21	27	0430	0.8	24	12	0503	0.9	27	27	0602	1.0	30	12	0035	2.0	61
Th	0923	1.8	55	F	1012	1.6	49	Su	1015	1.5	46	M	1037	1.3	40	W	0729	0.9	27
	1600	0.5	15		1636	0.5	15		1640	0.4	12		1707	0.5	15		1157	1.2	37
	2221	1.6	49		2327	1.7	52		2352	2.0	61						1811	0.4	12
13	0403	0.8	24	28	0532	0.9	27	13	0615	1.0	30	28	0035	1.8	55	13	0145	2.0	61
F	1002	1.7	52	Sa	1048	1.4	43	M	1101	1.4	43	Tu	0711	1.1	34	Th	0842	0.9	27
	1636	0.4	12		1713	0.5	15		1730	0.4	12		1123	1.3	40		1318	1.2	37
	2315	1.7	52										1759	0.6	18		1922	0.5	15
14	0510	0.9	27	29	0022	1.8	55	14	0055	2.0	61	29	0134	1.8	55	14	0249	2.0	61
Sa	1044	1.5	46	Su	0641	1.0	30	Tu	0741	1.0	30	W	0825	1.1	34	F	0945	0.8	24
	1718	0.4	12		1126	1.3	40		1203	1.3	40		1227	1.2	37		1439	1.3	40
					1755	0.5	15		1826	0.4	12		1851	0.6	18		2038	0.5	15
15	0015	1.8	55	30	0121	1.8	55	15	0204	2.1	64	30	0233	1.8	55	15	0349	2.0	61
Su	0624	0.9	27	M	0757	1.0	30	W	0902	0.9	27	Th	0933	1.0	30	Sa	1033	0.7	21
	1130	1.4	43		1212	1.3	40		1314	1.2	37		1344	1.2	37		1553	1.4	43
	1801	0.4	12		1841	0.5	15		1931	0.4	12		1953	0.6	18		2149	0.5	15
				31	0220	1.8	55					31	0323	1.9	58				
				Tu	0914	1.0	30					F	1018	0.9	27				
					1308	1.2	37						1458	1.2	37				
					1931	0.5	15						2055	0.6	18				

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER								NOVEMBER								DECEMBER															
Time				Height				Time				Height				Time				Height				Time				Height			
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm		
1	0405	1.7	52		16	0500	1.5	46		1	0445	1.3	40		16	0031	0.4	12		1	0456	0.8	24		16	0059	0.2	6			
M	1033	0.6	18		Tu	1106	0.4	12		Th	1055	0.1	3		F	0535	0.9	27		Sa	1103	-0.3	-9		Su	0538	0.6	18			
	1630	1.5	46			1730	1.6	49			1740	1.7	52			1132	0.1	3			1810	1.7	52			1140	-0.2	-6			
	2226	0.6	18			2348	0.5	15								1836	1.6	49								1855	1.3	40			
2	0447	1.7	52		17	0539	1.4	43		2	0005	0.4	12		17	0114	0.4	12		2	0051	0.2	6		17	0138	0.2	6			
Tu	1108	0.5	15		W	1140	0.4	12		F	0528	1.2	37		Sa	0607	0.9	27		Su	0548	0.8	24		M	0619	0.6	18			
	1716	1.6	49			1815	1.7	52			1135	0.0	0			1207	0.0	0			1153	-0.3	-9			1219	-0.2	-6			
	2322	0.6	18								1828	1.9	55			1917	1.6	49			1902	1.7	52			1931	1.3	40			
3	0525	1.6	49		18	0037	0.5	15		3	0055	0.4	12		18	0153	0.4	12		3	0145	0.1	3		18	0213	0.2	6			
W	1140	0.4	12		Th	0614	1.3	40		Sa	0614	1.2	37		Su	0642	0.8	24		M	0641	0.8	24		Tu	0700	0.6	18			
	1803	1.7	52			1211	0.3	9			1216	0.0	0			1244	0.0	0			1242	-0.4	-12			1257	-0.2	-6			
						1857	1.7	52			1917	1.9	58			1953	1.5	46			1954	1.7	52			2004	1.3	40			
4	0012	0.5	15		19	0123	0.6	18		4	0151	0.4	12		19	0234	0.4	12		4	0237	0.1	3		19	0249	0.2	6			
Th	0604	1.6	49		F	0643	1.2	37		Su	0659	1.1	34		M	0718	0.8	24		Tu	0738	0.8	24		W	0740	0.6	18			
	1215	0.3	9			1243	0.3	9			1301	-0.1	-3			1316	0.0	0			1335	-0.3	-9			1336	-0.2	-6			
	1848	1.9	58			1936	1.8	55			2006	1.9	58			2031	1.5	46			2044	1.7	52			2039	1.2	37			
5	0104	0.5	15		20	0206	0.6	18		5	0246	0.4	12		20	0311	0.4	12		5	0326	0.1	3		20	0321	0.1	3			
F	0643	1.5	46		Sa	0715	1.2	37		M	0748	1.0	30		Tu	0757	0.8	24		W	0834	0.8	24		Th	0826	0.6	18			
	1251	0.3	9			1315	0.3	9			1349	-0.1	-3			1355	0.1	3			1433	-0.3	-9			1418	-0.1	-3			
	1935	2.0	61			2015	1.7	52			2058	1.9	58			2106	1.5	46			2136	1.6	49			2114	1.2	37			
6	0157	0.6	18		21	0249	0.6	18		6	0343	0.4	12		21	0350	0.4	12		6	0417	0.1	3		21	0351	0.1	3			
Sa	0725	1.4	43		Su	0744	1.1	34		Tu	0843	1.0	30		W	0839	0.8	24		Th	0937	0.8	24		F	0914	0.6	18			
	1330	0.2	6			1347	0.3	9			1442	0.0	0			1434	0.1	3			1532	-0.2	-6			1503	-0.1	-3			
	2024	2.0	61			2055	1.7	52			2154	1.9	58			2145	1.4	43			2229	1.4	43			2150	1.1	34			
7	0251	0.6	18		22	0329	0.7	21		7	0440	0.4	12		22	0428	0.4	12		7	0507	0.1	3		22	0427	0.0	0			
Su	0807	1.4	43		M	0818	1.1	34		W	0943	1.0	30		Th	0929	0.8	24		F	1041	0.8	24		Sa	1005	0.7	21			
	1413	0.2	6			1425	0.3	9			1539	0.0	0			1522	0.2	6			1638	-0.1	-3			1553	0.0	0			
	2116	2.1	64			2135	1.7	52			2250	1.8	55			2222	1.3	40			2319	1.3	40			2228	1.0	30			
8	0350	0.6	18		23	0412	0.7	21		8	0536	0.4	12		23	0510	0.3	9		8	0555	0.1	3		23	0502	0.0	0			
M	0852	1.3	40		Tu	0857	1.1	34		Th	1051	1.0	30		F	1025	0.8	24		Sa	1148	0.9	27		Su	1101	0.8	24			
	1458	0.2	6			1503	0.3	9			1643	0.1	3			1614	0.2	6			1747	0.1	3			1651	0.1	3			
	2211	2.0	61			2217	1.6	49			2350	1.6	49			2307	1.3	40								2307	1.0	30			
9	0453	0.7	21		24	0501	0.7	21		9	0635	0.4	12		24	0552	0.3	9		9	0013	1.1	34		24	0542	-0.1	-3			
Tu	0948	1.2	37		W	0943	1.0	30		F	1205	1.0	30		Sa	1129	0.8	24		Su	0643	0.0	0		M	1201	0.8	24			
	1551	0.2	6			1548	0.4	12			1759	0.2	6			1713	0.3	9			1257	1.0	30			1756	0.1	3			
	2311	2.0	61			2304	1.6	49							2353	1.2	37			1900	0.1	3			2352	0.9	27				
10	0600	0.7	21		25	0549	0.7	21		10	0050	1.5	46		25	0634	0.2	6		10	0105	1.0	30		25	0624	-0.2	-6			
W	1050	1.1	34		Th	1036	1.0	30		Sa	0733	0.3	9		Su	1235	0.9	27		M	0729	0.0	0		Tu	1306	0.9	27			
	1652	0.3	9			1637	0.4	12			1319	1.1	34			1820	0.3	9			1403	1.1	34			1907	0.2	6			
						2354	1.5	46			1915	0.3	9								2017	0.2	6								
11	0014	1.9	58		26	0642	0.7	21		11	0151	1.4	43		26	0039	1.1	34		11	0157	0.8	24		26	0041	0.8	24			
Th	0707	0.7	21		F	1150	1.0	30		Su	0819	0.3	9		M	0717	0.2	6		Tu	0815	0.0	0		W	0711	-0.2	-6			
	1205	1.1	34			1742	0.5	15			1428	1.2	37			1339	1.0	30			1505	1.1	34			1409	1.1	34			
	1805	0.4	12								2035	0.3	9			1931	0.3	9			2131	0.2	6			2024	0.2	6			
12	0121	1.8	55		27	0045	1.5	46		12	0243	1.2	37		27	0130	1.1	34		12	0247	0.7	21		27	0133	0.7	21			
F	0810	0.7	21		Sa	0734	0.6	18		M	0903	0.3	9		Tu	0759	0.1	3		W	0857	-0.1	-3		Th	0801	-0.3	-9			
	1322	1.2	37			1259	1.1	34			1529	1.3	40			1438	1.2	37			1600	1.2	37			1511	1.2	37			
	1921	0.4	12			1849	0.5	15			2144	0.4	12			2045	0.3	9			2234	0.2	6			2138	0.2	6			
13	0224	1.7	52		28	0134	1.4	43		13	0336	1.1	34		28	0223	1.0	30		13	0333	0.7	21		28	0232	0.6	18			
Sa	0904	0.6	18		Su	0816	0.5	15		Tu	0942	0.2	6		W	0844	0.0	0		Th	0939	-0.1	-3		F	0853	-0.4	-12			
	1443	1.3	40			1408	1.1	34			1623	1.4	43			1535	1.3	40			1649	1.3	40			1607	1.3	40			
	2038	0.5	15			1959	0.5	15			2248	0.4	12			2152	0.3	9			2329	0.2	6			2245	0.1	3			
14	0322	1.7	52		29	0227	1.4	43		14	0418	1.0	30		29	0312	0.9	27		14	0415	0.6	18		29	0333	0.6	18			
Su	0951	0.6	18		M	0858	0.4	12		W	1023	0.1	3		Th	0928	-0.1	-3		F	1019	-0.2	-6		Sa	0947	-0.5	-15			
	1546	1.4	43			1509	1.3	40			1711	1.5	46			1629	1.5	46			1737	1.3	40			1705	1.4	43			
	2149	0.5	15			2107	0.5	15			2341	0.4	12			2255	0.2	6								2348	0.0	0			
15	0415	1.6	49		30	0313	1.4	43		15	0500	1.0	30		30	0404	0.9	27		15	0017	0.2	6		30	0434	0.6	18			
M	1030	0.5	15		Tu	0936	0.3	9		Th	1059	0.1	3		F	1014	-0.2	-6		Sa	0500	0.6	18		Su	1042	-0.5	-15			
	1641	1.5	46			1602	1.4	43			1756	1.5	46			1721	1.6	49			1101	-0.2	-6			1758	1.5	46			
	2252	0.5	15			2210	0.5	15							2354	0.2	6			1817	1.3	40									
					31	0359	1.3	40																31	0041	0.0	0				
					W	1013	0.2	6																							

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JANUARY								FEBRUARY								MARCH													
Time		Height	Time		Height	Time		Height	Time		Height	Time		Height	Time		Height	Time		Height									
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm					
1	0523	-0.1	-3		16	0607	-0.5	-15		1	0618	-0.2	-6		16	0007	2.3	70		1	0509	-0.2	-6		16	0514	0.2	6	
M	1027	2.7	82		Tu	1137	2.4	73		Th	1139	2.9	88		F	0632	-0.1	-3		Th	1027	3.3	101		F	1045	3.0	91	
	1736	0.0	0			1832	-0.3	-9			1909	-0.1	-3			1211	2.6	79			1800	-0.1	-3			1810	0.3	9	
	2245	2.6	85			2358	2.3	70							1929	0.1	3			2303	2.8	85			2330	2.5	76		
2	0603	-0.1	-3		17	0642	-0.4	-12		2	0013	2.5	76		17	0058	2.2	67		2	0558	-0.1	-3		17	0551	0.3	9	
Tu	1113	2.7	82		W	1221	2.4	73		F	0709	-0.2	-6		Sa	0711	0.1	3		F	1117	3.2	98		Sa	1123	2.9	88	
	1827	0.0	0			1919	-0.2	-6			1232	2.8	85			1257	2.5	76			1858	0.0	0			1856	0.4	12	
	2334	2.6	79								2012	-0.1	-3			2024	0.2	6			2359	2.6	79						
3	0643	-0.1	-3		18	0050	2.1	64		3	0114	2.3	70		18	0156	2.1	64		3	0652	0.0	0		18	0017	2.4	73	
W	1203	2.7	82		Th	0720	-0.3	-9		Sa	0805	-0.2	-6		Su	0759	0.2	6		Sa	1213	3.0	91		Su	0635	0.4	12	
	1923	0.0	0			1309	2.3	70			1333	2.7	82			1351	2.5	76			2001	0.0	0			1208	2.9	88	
						2010	-0.1	-3			2122	0.0	0			2122	0.3	9							1945	0.5	15		
4	0032	2.5	76		19	0145	2.0	61		4	0225	2.1	64		19	0259	2.1	64		4	0104	2.4	73		19	0109	2.4	73	
Th	0733	-0.2	-6		F	0803	-0.2	-6		Su	0910	-0.1	-3		M	0858	0.3	9		Su	0753	0.0	0		M	0725	0.5	15	
	1256	2.7	82			1400	2.3	70			1441	2.6	79			1450	2.5	76			1317	2.8	85			1301	2.8	85	
	2026	0.0	0			2107	0.0	0			2231	-0.1	-3			2223	0.3	9			2107	0.1	3			2040	0.6	18	
5	0132	2.3	70		20	0245	2.0	61		5	0338	2.1	64		20	0359	2.1	64		5	0217	2.3	70		20	0211	2.4	73	
F	0825	-0.2	-6		Sa	0849	-0.1	-3		M	1021	-0.1	-3		Tu	1001	0.3	9		M	0902	0.1	3		Tu	0822	0.6	18	
	1357	2.7	82			1454	2.3	70			1554	2.5	76			1551	2.5	76			1430	2.6	79			1357	2.8	85	
	2134	-0.1	-3			2205	0.1	3			2335	-0.2	-6			2320	0.3	9			2214	0.1	3			2139	0.6	18	
6	0240	2.2	67		21	0344	2.0	61		6	0447	2.1	64		21	0450	2.2	67		6	0332	2.2	67		21	0311	2.4	73	
Sa	0926	-0.2	-6		Su	0942	0.0	0		Tu	1130	-0.2	-6		W	1106	0.3	9		Tu	1014	0.1	3		W	0930	0.6	18	
	1459	2.7	82			1547	2.4	73			1702	2.5	76			1650	2.7	82			1549	2.5	76			1506	2.6	85	
	2243	-0.1	-3			2303	0.1	3													2316	0.0	0			2235	0.6	18	
7	0349	2.1	64		22	0439	2.0	61		7	0036	-0.3	-9		22	0012	0.2	6		7	0439	2.3	70		22	0403	2.6	79	
Su	1032	-0.2	-6		M	1038	0.1	3		W	0548	2.2	67		Th	0537	2.4	73		W	1121	0.0	0		Th	1036	0.6	18	
	1606	2.7	82			1639	2.4	73			1234	-0.3	-9			1206	0.2	6			1658	2.5	76			1607	2.9	88	
	2348	-0.2	-6								1804	2.5	76			1741	2.8	85								2327	0.5	15	
8	0454	2.1	64		23	0001	0.1	3		8	0127	-0.4	-12		23	0059	0.2	6		8	0014	-0.1	-3		23	0453	2.8	85	
M	1137	-0.3	-9		Tu	0529	2.1	64		Th	0642	2.3	70		F	0617	2.6	79		Th	0537	2.4	73		F	1137	0.4	12	
	1709	2.7	82			1137	0.1	3			1330	-0.4	-12			1300	0.1	3			1222	-0.1	-3			1703	3.0	91	
						1727	2.5	76			1859	2.6	79			1827	2.9	88			1756	2.6	79						
9	0049	-0.4	-12		24	0049	0.0	0		9	0215	-0.5	-15		24	0142	0.1	3		9	0103	-0.2	-6		24	0014	0.4	12	
Tu	0556	2.2	67		W	0615	2.2	67		F	0730	2.4	73		Sa	0656	2.8	85		F	0626	2.6	79		Sa	0535	0.3	91	
	1241	-0.4	-12			1231	0.1	3			1421	-0.4	-12			1352	0.0	0			1317	-0.1	-3			1235	0.3	9	
	1809	2.7	82			1812	2.7	82			1947	2.6	79			1910	3.0	91			1846	2.7	82			1756	3.1	94	
10	0144	-0.5	-15		25	0136	0.0	0		10	0259	-0.5	-15		25	0223	0.0	0		10	0147	-0.2	-6		25	0100	0.3	9	
W	0651	2.3	70		Th	0654	2.3	70		Sa	0816	2.5	76		Su	0734	3.0	91		Sa	0713	2.7	82		Su	0620	3.3	101	
	1339	-0.5	-15			1324	0.0	0			1510	-0.4	-12			1440	-0.1	-3			1406	-0.2	-6			1327	0.2	6	
	1904	2.7	82			1852	2.8	85			2032	2.6	79			1955	3.1	94			1932	2.7	82			1844	3.2	98	
11	0235	-0.6	-18		26	0219	-0.1	-3		11	0338	-0.5	-15		26	0303	-0.1	-3		11	0229	-0.2	-6		26	0144	0.2	6	
Th	0744	2.3	70		F	0730	2.4	73		Su	0858	2.6	79		M	0813	3.2	98		Su	0751	2.8	85		M	0702	3.5	107	
	1434	-0.5	-15			1412	-0.1	-3			1554	-0.4	-12			1528	-0.2	-6			1451	-0.2	-6			1419	0.0	0	
	1956	2.7	82			1934	2.9	88			2115	2.6	79			2039	3.1	94			2014	2.7	82			1931	3.3	101	
12	0322	-0.6	-18		27	0258	-0.1	-3		12	0415	-0.4	-12		27	0343	-0.1	-3		12	0306	-0.1	-3		27	0227	0.1	3	
F	0834	2.4	73		Sa	0806	2.6	79		M	0937	2.6	79		Tu	0855	3.3	101		M	0828	2.9	88		Tu	0745	3.7	113	
	1525	-0.5	-15			1500	-0.1	-3			1635	-0.3	-9			1616	-0.2	-6			1532	-0.1	-3			1509	-0.1	-3	
	2046	2.7	82			2015	2.9	88			2156	2.6	79			2123	3.1	94			2051	2.7	82			2018	3.3	101	
13	0407	-0.6	-18		28	0337	-0.2	-6		13	0449	-0.3	-9		28	0424	-0.2	-6		13	0338	-0.1	-3		28	0313	0.0	0	
Sa	0921	2.4	73		Su	0842	2.7	82		Tu	1015	2.7	82		W	0940	3.4	104		Tu	0904	3.0	91		W	0830	3.8	116	
	1614	-0.5	-15			1548	-0.2	-6			1717	-0.2	-6			1707	-0.2	-6			1612	0.0	0			1601	-0.1	-3	
	2134	2.6	79			2057	2.9	88			2239	2.5	76			2211	3.0	91			2132	2.7	82			2107	3.3	101	
14	0449	-0.6	-18		29	0415	-0.2	-6		14	0521	-0.3	-9						14	0410	0.0	0		29	0359	0.0	0		
Su	1007	2.4	73		M	0920	2.9	88		W	1052	2.6	79						W	0935	3.0	91		Th	0918	3.7	113		
	1700	-0.5	-15			1633	-0.2	-6			1758	-0.1	-3							1651	0.1	3			1651	-0.1	-3		
	2221	2.5	76			2141	2.9	88			2321	2.4	73							2209	2.7	82			2157	3.1	94		
15	0528	-0.5	-15		30	0454	-0.2	-6		15	0556	-0.2	-6						15	0442	0.1	3		30	0448	0.0	0		
M	1051	2.4	73		Tu	1002	3.0	91		Th	1130	2.6	79						Th	1009	3.0	91		F	1006	3.6	110		
	1747	-0.4	-12			1722	-0.2	-6			1843	0.0	0							1731	0.2	6			1747	0.0	0		
	2309	2.4	73			2228	2.8	85												2249	2.6	79			2250	3.0	91		
					31	0535	-0.3	-9																31	0542	0.1	3		
					W	1048	3.0	91																Sa	1059	3.4	104		
						1812	-0.2	-6																					

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

APRIL

MAY

JUNE

Time meridian 75° W. 0000 is midnight, 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY								AUGUST								SEPTEMBER														
Time		Height	Time		Height	Time		Height	Time		Height	Time		Height	Time		Height	Time		Height										
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm						
1 Su	0238	2.9	88		16 M	0123	3.4	104		1 W	0336	3.0	91		16 Th	0314	3.2	98		1 Sa	0445	3.1	94		16 Su	0525	3.1	94		
	0934	0.5	15			0900	0.7	21			1051	0.7	21			1103	0.5	15			1156	0.7	21			1236	0.2	6		
	1506	2.5	76			1357	2.8	85			1621	2.5	76			1605	2.7	82			1727	2.8	85			1757	2.9	88		
	2125	0.3	9			2040	0.4	12			2218	0.6	18			2251	0.4	12			2345	0.7	21							
2 M	0331	2.9	88		17 Tu	0223	3.4	104		2 Th	0429	3.0	91		17 F	0424	3.2	98		2 Su	0532	3.3	101		17 M	0047	0.2	6		
	1031	0.5	15			1007	0.6	18			1144	0.6	18			1204	0.4	12			1241	0.6	18			0618	3.1	94		
	1601	2.5	76			1505	2.7	82			1716	2.6	79			1711	2.7	82			1806	3.0	91			1323	0.2	6		
	2210	0.4	12			2144	0.4	12			2316	0.6	18			2358	0.3	9							1844	3.1	94			
3 Tu	0419	3.0	91		18 W	0329	3.4	104		3 F	0519	3.1	94		18 Sa	0529	3.2	98		3 Su	0039	0.6	18		18 Tu	0140	0.2	6		
	1127	0.5	15			1116	0.5	15			1236	0.6	18			1259	0.2	6			M	0617	3.4	104		Tu	0705	3.2	98	
	1653	2.5	76			1613	2.7	82			1804	2.7	82			1809	2.9	88			1323	0.6	18			1405	0.1	3		
	2301	0.5	15			2254	0.3	9													1842	3.2	98			1927	3.2	98		
4 W	0506	3.1	94		19 Th	0432	3.4	104		4 Sa	0012	0.7	21		19 Su	0059	0.2	6		4 Tu	0131	0.6	18		19 W	0228	0.2	6		
	1220	0.5	15			1218	0.3	9			0606	3.2	98			0629	3.3	101			0656	3.5	107			0750	3.2	98		
	1745	2.6	79			1718	2.7	82			1321	0.5	15			1348	0.1	3			1404	0.5	15			1445	0.1	3		
	2351	0.5	15								1847	2.8	85			1902	3.0	91			1918	3.4	104			2008	3.3	101		
5 Th	0551	3.1	94		20 F	0004	0.3	9		5 Su	0107	0.6	18		20 M	0155	0.1	3		5 W	0218	0.5	15		20 Th	0313	0.2	6		
	1309	0.5	15			0535	3.4	104			0645	3.3	101			0718	3.3	101			0735	3.6	110			0831	3.1	94		
	1833	2.6	79			1316	0.2	6			1402	0.5	15			1434	0.0	0			1441	0.4	12			1522	0.2	6		
						1818	2.8	85			1924	2.9	88			1950	3.1	94			1954	3.6	110			2046	3.3	101		
6 F	0041	0.6	18		21 Sa	0107	0.2	6		6 M	0155	0.6	18		21 Tu	0245	0.1	3		6 Th	0304	0.4	12		21 F	0356	0.3	9		
	0630	3.2	98			0633	3.4	104			0724	3.4	104			0806	3.3	101			0816	3.6	110			0909	3.1	94		
	1354	0.4	12			1408	0.0	0			1443	0.5	15			1516	0.0	0			1519	0.4	12			1555	0.3	9		
	1916	2.7	82			1915	2.9	88			1956	3.1	94			2034	3.2	98			2032	3.7	113			2121	3.3	101		
7 Sa	0129	0.6	18		22 Su	0204	0.1	3		7 Tu	0239	0.6	18		22 W	0333	0.1	3		7 F	0351	0.4	12		22 Sa	0437	0.4	12		
	0707	3.3	101			0729	3.4	104			0801	3.5	107			0852	3.3	101			0858	3.6	110			0950	3.0	91		
	1436	0.4	12			1458	-0.1	-3			1520	0.4	12			1556	0.0	0			1559	0.3	9			1629	0.4	12		
	1954	2.8	85			2008	3.0	91			2026	3.2	98			2115	3.2	98			2114	3.8	116			2157	3.3	101		
8 Su	0216	0.6	18		23 M	0300	0.1	3		8 W	0327	0.5	15		23 Th	0419	0.2	6		8 Sa	0441	0.4	12		23 Su	0518	0.5	15		
	0744	3.4	104			0821	3.4	104			0838	3.5	107			0934	3.2	98			0943	3.5	107			1032	2.9	88		
	1516	0.4	12			1543	-0.1	-3			1555	0.4	12			1633	0.1	3			1641	0.3	9			1702	0.4	12		
	2029	2.8	85			2058	3.1	94			2101	3.4	104			2157	3.2	98			2158	3.8	116			2234	3.2	98		
9 M	0301	0.6	18		24 Tu	0352	0.1	3		9 W	0411	0.5	15		24 Th	0502	0.3	9		9 Su	0530	0.5	15		24 M	0600	0.6	18		
	0821	3.4	104			0911	3.3	101			0919	3.5	107			1019	3.1	94			1032	3.3	101			1115	2.8	85		
	1554	0.4	12			1627	-0.1	-3			1632	0.4	12			1709	0.2	6			1726	0.3	9			1739	0.5	15		
	2100	2.9	88			2147	3.1	94			2140	3.5	107			2238	3.2	98			2246	3.7	113			2314	3.2	98		
10 Tu	0346	0.6	18		25 W	0441	0.1	3		10 F	0457	0.5	15		25 Sa	0547	0.4	12		10 M	0627	0.5	15		25 Tu	0646	0.7	21		
	0858	3.4	104			0959	3.2	98			1001	3.4	104			1101	3.0	91			1123	3.1	94			1203	2.7	82		
	1630	0.4	12			1709	-0.1	-3			1710	0.4	12			1743	0.3	9			1817	0.4	12			1823	0.6	18		
	2132	3.0	91			2232	3.1	94			2224	3.5	107			2318	3.1	94			2341	3.5	107							
11 W	0431	0.6	18		26 Th	0531	0.2	6		11 Sa	0546	0.6	18		26 Su	0631	0.5	15		11 Tu	0728	0.6	18		26 W	0000	3.1	94		
	0939	3.4	104			1048	3.1	94			1048	3.3	101			1150	2.8	85			1223	2.9	88			0735	0.8	24		
	1705	0.4	12			1750	0.0	0			1750	0.4	12			1820	0.4	12			1916	0.4	12			1258	2.6	79		
	2209	3.1	94			2318	3.1	94			2310	3.5	107								1916	0.4	12			1912	0.7	21		
12 Th	0515	0.6	18		27 F	0618	0.3	9		12 Su	0640	0.6	18		27 M	0003	3.1	94		12 W	0042	3.3	101		27 Th	0053	3.0	91		
	1021	3.3	101			1136	2.9	88			1139	3.1	94			0720	0.7	21			0833	0.6	18			0828	0.9	27		
	1741	0.4	12			1827	0.1	3			1833	0.4	12			1243	2.7	82			1332	2.7	82			1400	2.6	79		
	2251	3.2	98													1901	0.5	15			2025	0.5	15			2009	0.8	24		
13 F	0603	0.6	18		28 Sa	0007	3.0	91		13 M	0002	3.5	107		28 Tu	0050	3.0	91		13 Th	0153	3.2	98		28 F	0156	3.0	91		
	1107	3.2	98			0708	0.4	12			0740	0.6	18			0812	0.8	24			0941	0.6	18			0925	0.9	27		
	1819	0.4	12			1229	2.8	85			1235	2.9	88			1341	2.6	79			1448	2.7	82			1501	2.7	82		
	2336	3.3	101			1906	0.2	6			1924	0.4	12			1946	0.6	18			2137	0.5	15			2112	0.8	24		
14 Sa	0655	0.7	21		29 Su	0055	3.0	91		14 M	0058	3.4	104		29 Tu	0146	3.0	91		14 W	0309	3.1	94		29 Sa	0301	3.0	91		
	1158	3.1	94			0800	0.5																							

OCTOBER

NOVEMBER

DECEMBER

Day	Time		Height		Day	Time		Height		Day	Time		Height		Day	Time		Height		Day	Time		Height																																																																																																																																																																																																																																																																																																																																																																																																																																													
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																																																																																																																																																																																																																																																																																																																																																																																																																																												
1	M	0455	3.2	98	16	Tu	0030	0.1	3	1	Th	0038	0.2	9	16	F	0147	0.0	0	1	Sa	0113	-0.1	-3	16	Su	0206	-0.1	-3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1157	0.7	21			0601	2.9	88			0555	3.1	94			0705	2.5	76			0620	2.8	85			0726	2.2	67																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1722	3.2	98			1251	0.1	3			1241	0.2	6			1337	0.1	3			1303	-0.2	-6			1348	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
							1821	3.0	91			1806	3.6	110			1913	2.9	88			1831	3.4	104			1926	2.7	82																																																																																																																																																																																																																																																																																																																																																																																																																																							
2	Tu	0012	0.6	18	17	W	0123	0.1	3	2	F	0132	0.2	6	17	Sa	0229	0.0	0	2	Su	0209	-0.2	-6	17	M	0248	-0.1	-3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0540	3.3	101			0646	2.9	88			0642	3.2	98			0746	2.5	76			0712	2.8	85			0807	2.3	70																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1239	0.6	18			1333	0.2	6			1328	0.1	3			1414	0.2	6			1358	-0.2	-6			1428	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1801	3.4	104			1903	3.1	94			1854	3.7	113			1947	2.9	88			1923	3.4	104			2000	2.7	82																																																																																																																																																																																																																																																																																																																																																																																																																																							
3	W	0103	0.5	15	18	Th	0208	0.1	3	3	Sa	0224	0.1	3	18	Su	0311	0.1	3	3	M	0303	-0.3	-9	18	Tu	0327	-0.1	-3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0625	3.4	104			0728	2.9	88			0731	3.2	98			0827	2.5	76			0804	2.8	85			0845	2.3	70																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1321	0.4	12			1411	0.2	6			1418	0.0	0			1452	0.2	6			1454	-0.3	-9			1510	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1839	3.6	110			1939	3.2	98			1941	3.8	116			2021	3.0	91			2016	3.4	104			2035	2.7	82																																																																																																																																																																																																																																																																																																																																																																																																																																							
4	Th	0153	0.4	12	19	F	0252	0.2	6	4	Su	0317	0.0	0	19	M	0350	0.1	3	4	Tu	0354	-0.4	-12	19	W	0406	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0708	3.5	107			0807	2.9	88			0820	3.2	98			0905	2.5	76			0858	2.8	85			0919	2.3	70																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1403	0.3	9			1447	0.3	9			1509	0.0	0			1529	0.3	9			1552	-0.4	-12			1551	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1921	3.8	116			2015	3.2	98			2031	3.7	113			2056	3.0	91			2110	3.3	101			2110	2.8	85																																																																																																																																																																																																																																																																																																																																																																																																																																							
5	F	0244	0.3	9	20	Sa	0333	0.2	6	5	M	0410	0.0	0	20	Tu	0430	0.2	6	5	W	0446	-0.4	-12	20	Th	0441	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0753	3.5	107			0847	2.9	88			0911	3.1	94			0942	2.5	76			0953	2.7	82			0949	2.4	73																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1446	0.3	9			1521	0.3	9			1603	0.0	0			1608	0.3	9			1649	-0.4	-12			1633	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2005	3.9	119			2046	3.2	98			2121	3.6	110			2131	2.9	88			2206	3.1	94			2148	2.7	82																																																																																																																																																																																																																																																																																																																																																																																																																																							
6	Sa	0332	0.3	9	21	Su	0412	0.3	9	6	Tu	0503	0.0	0	21	W	0508	0.3	9	6	Th	0539	-0.4	-12	21	F	0518	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0839	3.5	107			0924	2.8	85			1005	3.0	91			1019	2.5	76			1050	2.7	82			1023	2.4	73																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1531	0.2	6			1553	0.4	12			1700	0.0	0			1649	0.4	12			1747	-0.3	-9			1718	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2050	3.9	119			2122	3.2	98			2215	3.4	104			2209	2.9	88			2305	2.8	85			2228	2.7	82																																																																																																																																																																																																																																																																																																																																																																																																																																							
7	Su	0425	0.3	9	22	M	0453	0.4	12	7	Th	0558	0.0	0	22	F	0547	0.3	9	7	Sa	0631	-0.4	-12	22	Su	0552	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0925	3.4	104			1005	2.7	82			1102	2.8	85			1054	2.5	76			1149	2.6	79			1059	2.5	76																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1620	0.2	6			1630	0.5	15			1800	0.0	0			1734	0.4	12			1845	-0.3	-9			1100	0.2	6																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2138	3.8	116			2158	3.2	98			2314	3.2	98			2252	2.8	85			2313	2.6	79																																																																																																																																																																																																																																																																																																																																																																																																																																												
8	M	0517	0.3	9	23	Tu	0533	0.5	15	8	Th	0656	0.0	0	23	F	0627	0.4	12	8	Sa	0005	2.6	79	23	M	0627	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1016	3.2	98			1045	2.7	82			1205	2.7	82			1134	2.5	76			0722	-0.4	-12			1142	2.6	79																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1709	0.2	6			1709	0.5	15			1901	0.1	3			1824	0.4	12			1250	2.5	76			1848	0.2	6																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2230	3.7	113			2237	3.1	94								2339	2.8	85			1944	-0.2	-6																																																																																																																																																																																																																																																																																																																																																																																																																																												
9	Tu	0614	0.3	9	24	W	0615	0.6	18	9	F	0021	2.9	88	24	Sa	0706	0.4	12	9	Su	0111	2.4	73	24	M	0000	2.5	76																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1113	3.0	91			1129	2.6	79			0752	0.0	0			1220	2.5	76			0814	-0.3	-9			0704	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1808	0.3	9			1755	0.6	18			1314	2.6	79			1314	0.4	12			1353	2.4	73			1227	2.6	79																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2326	3.4	104			2321	3.0	91			2005	0.1	3			2046	-0.2	-6			1941	0.2	6																																																																																																																																																																																																																																																																																																																																																																																																																																												
10	W	0715	0.4	12	25	Th	0700	0.7	21	10	Sa	0135	2.7	82	25	Su	0032	2.7	82	10	M	0219	2.3	70	25	Tu	0053	2.4	73																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1215	2.8	85			1216	2.6	79			0850	0.0	0			0749	0.4	12			0906	-0.3	-9			0746	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1912	0.4	12			1845	0.7	21			1423	2.6	79			1309	2.6	79			1451	2.4	73			1320	2.7	82																																																																																																																																																																																																																																																																																																																																																																																																																																							
									2111			0.1	3	2011			0.4	12	2146			-0.2	-6	2039			0.2	6																																																																																																																																																																																																																																																																																																																																																																																																																																								
11	Th	0029	3.2	98	26	F	0013	2.9	88	11	Su	0248	2.6	79	26	M	0129	2.6	79	11	Tu	0320	2.2	67	26	W	0152	2.4	73																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0817	0.4	12			0747	0.7	21			0946	0.0	0			0834	0.3	9			0957	-0.2	-6			0836	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1327	2.7	82			1308	2.6	79			1527	2.6	79			1402	2.7	82			1547	2.4	73			1415	2.8	89																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2020	0.4	12			1941	0.7	21			2214	0.1	3			2111	0.4	12			2245	-0.1	-3			2146	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																							
12	F	0145	3.0	91	27	Sa	0109	2.9	88	12	M	0351	2.5	76	27	Tu	0230	2.6	79	12	W	0415	2.1	64	27	Th	0255	2.3	70																																																																																																																																																																																																																																																																																																																																																																																																																																							
		0919	0.4	12			0838	0.7	21			1039	0.0	0			0925	0.3	9			1045	-0.1	-3			0933	-0.1	-3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1442	2.7	82			1402	2.6	79			1621	2.7	82			1457	2.9	88			1639	2.5	76			1517	2.8	85																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2128	0.4	12			2042	0.7	21			2314	0.0	0			2213	0.3	9			2340	-0.2	-6			2254	0.0	0																																																																																																																																																																																																																																																																																																																																																																																																																																							
13	Sa	0304	2.9	88	28	Su	0212	2.9	88	13	M	0445	2.5	76	28	Tu	0330	2.6	79	13	W	0507	2.1	64	28	Th	0359	2.3	70																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1019	0.3	9			0927	0.7	21			1129	0.0	0			1016	0.2	6			1135	-0.1	-3			1034	-0.1	-3																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1551	2.7	82			1455	2.8	85			1709	2.7	82			1552	3.0	91			1724	2.5	76			1616	2.9	88																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2235	0.3	9			2145	0.6	18								2316	0.2	6								2357	-0.1	-3																																																																																																																																																																																																																																																																																																																																																																																																																																							
14	Su	0413	2.8	85	29	M	0313	2.9	88	14	Th	0009	0.0	0	29	F	0429	2.7	82	14	Sa	0034	-0.2	-6	29	M	0500	2.4	73																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1114	0.2	6			1018	0.6	18			0537	2.5	76			1111	0.1	3			0557	2.1	64			1140	-0.2	-6																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1646	2.8	85			1547	3.0	91			1214	0.0	0			1643	3.2	98			1220	-0.1	-3			1716	3.0	91																																																																																																																																																																																																																																																																																																																																																																																																																																							
		2335	0.2	6			2244	0.5	15			1755	2.8	85								1807	2.6	79																																																																																																																																																																																																																																																																																																																																																																																																																																												
15	M	0511	2.8	85	30	Tu	0413	3.0	91	15	Th	0101	0.0	0	30	F	0016	0.0	0	15	Sa	0122	-0.2	-6	30	Su	0059	-0.3	-9																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1206	0.2	6			1106	0.5	15			0621	2.5	76			0525	2.7	82			0644	2.2	67			0601	2.4	73																																																																																																																																																																																																																																																																																																																																																																																																																																							
		1737	2.9	88			1634	3.2	98			1257	0.1	3			1207	0.0	0			1306	0.0	0			1247	-0.3	-9																																																																																																																																																																																																																																																																																																																																																																																																																																							
							2342	0.4	12			1836	2.9	88			1738	3.3	101			1849	2.6	79			1814	3.1	94																																																																																																																																																																																																																																																																																																																																																																																																																																							
					31	W	0505	3.1	94																																																																																																																																																																																																																																																																																																																																																																																																																																																											

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER				NOVEMBER				DECEMBER							
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height				
Day	h	m	ft	cm	Day	h	m	ft	cm	Day	h	m	ft	cm	
1	0003	0.6	18		16	0101	0.2	6		1	0109	-0.3	-9		
M	0609	2.8	85		Tu	0717	3.0	91		Sa	0741	3.3	101		
	1219	0.6	18			1333	0.3	9			1413	-0.2	-6		
	1827	3.0	91			1935	2.8	85			2003	2.5	76		
2	0045	0.4	12		17	0141	0.2	6		2	0203	-0.4	-12		
Tu	0656	3.0	91		W	0759	3.1	94		Su	0834	3.4	104		
	1311	0.4	12			1418	0.3	9			1507	-0.3	-9		
	1914	3.1	94			2015	2.8	85			2057	2.5	76		
3	0127	0.2	6		18	0217	0.2	6		3	0257	-0.5	-15		
W	0741	3.3	101		Th	0836	3.2	98		M	0928	3.4	104		
	1359	0.2	6			1458	0.3	9			1600	-0.3	-9		
	1959	3.1	94			2054	2.7	82			2151	2.5	76		
4	0209	0.1	3		19	0253	0.2	6		4	0352	-0.4	-12		
Th	0826	3.5	107		F	0913	3.2	98		Tu	1021	3.3	101		
	1449	0.1	3			1538	0.3	9			1653	-0.3	-9		
	2045	3.1	94			2129	2.6	79			2245	2.5	76		
5	0251	0.0	0		20	0327	0.3	9		5	0448	-0.4	-12		
F	0811	3.6	110		Sa	0950	3.1	94		W	1115	3.1	94		
	1536	0.1	3			1617	0.4	12			1745	-0.2	-6		
	2132	3.0	91			2204	2.6	79			2343	2.5	76		
6	0315	0.0	0		21	0403	0.4	12		6	0545	-0.2	-6		
Sa	0459	3.6	110		Su	1025	3.1	94		Th	1210	2.9	88		
	1626	0.1	3			1654	0.5	15			1839	-0.2	-6		
	2221	2.9	88			2240	2.5	76			2354	2.2	67		
7	0421	0.0	0		22	0436	0.5	15		7	0040	2.4	73		
Su	1047	3.6	110		M	1101	3.0	91		F	0647	-0.1	-3		
	1719	0.2	6			1735	0.6	18			1305	2.7	82		
	2311	2.8	85			2319	2.4	73			1932	-0.1	-3		
8	0510	0.1	3		23	0517	0.6	18		8	0140	2.4	73		
M	1140	3.4	104		Tu	1139	2.9	88		Sa	0750	0.1	3		
	1815	0.3	9			1817	0.7	21			1401	2.4	73		
											2025	0.0	0		
9	0007	2.7	82		24	0000	2.3	70		9	0241	2.4	73		
Tu	0606	0.2	6		W	0556	0.7	21		Su	0854	0.2	6		
	1239	3.3	101			1220	2.8	85			1501	2.3	70		
	1918	0.4	12			1900	0.8	24			2117	0.0	0		
10	0108	2.5	76		25	0046	2.3	70		10	0343	2.4	73		
W	0710	0.3	9		Th	0641	0.8	24		M	1000	0.3	9		
	1344	3.1	94			1307	2.7	82			1559	2.1	64		
	2023	0.5	15			1951	0.8	24			2209	0.1	3		
11	0216	2.5	76		26	0142	2.3	70		11	0439	2.4	73		
Th	0819	0.5	15		F	0737	0.8	24		Tu	1100	0.3	9		
	1453	3.0	91			1401	2.7	82			1654	2.0	61		
	2130	0.5	15			2043	0.8	24			2300	0.1	3		
12	0328	2.5	76		27	0239	2.3	70		12	0533	2.5	76		
F	0933	0.5	15		Sa	0843	0.9	27			W	1157	0.2	6	
	1603	2.9	88			1500	2.6	79			1746	2.0	61		
	2232	0.5	15			2136	0.7	21			2346	0.1	3		
13	0438	2.6	79		28	0342	2.4	73		13	0622	2.6	79		
Sa	1045	0.5	15		Su	0948	0.8	24		F	1203	0.0	0		
	1707	2.8	85			1557	2.7	82			1749	2.1	64		
	2328	0.4	12			2227	0.6	18			2352	-0.3	-9		
14	0539	2.7	82		29	0438	2.6	79		14	0032	0.1	3		
Su	1149	0.4	12		M	1051	0.6	18			F	0705	2.6	79	
	1803	2.8	85			1656	2.7	82			1333	0.2	6		
						2315	0.4	12			1918	2.0	61		
15	0018	0.3	9		30	0533	2.9	88		15	0114	0.0	0		
M	0632	2.9	88		Tu	1149	0.5	-15			Sa	0746	2.7	82	
	1245	0.3	9			1749	2.8	85				1414	0.1	3	
	1851	2.8	85									1959	2.1	64	
				</											

Time meridian 75° W. 0000 is midnight, 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

TABLE 1.2 —TIDAL DIFFERENCES AND OTHER CONSTANTS

EXPLANATION OF TABLE

The publication of full daily predictions is necessarily limited to a comparatively small number of stations. Tide predictions for many other places, however, can be obtained by applying certain differences to the predictions at the reference stations in table 1.1. The following pages list the places called "subordinate stations" for which such predictions can be made, and the differences or ratios to be used. These differences or ratios are to be applied to the predictions for the proper reference stations which is listed in table 1.2 in bold face type above the differences for the subordinate station. The stations in this table are arranged in geographical order. The index at the end of this volume will assist in locating a particular station.

Caution. — The time and height differences listed in table 1.2 are average differences derived from comparisons of simultaneous tide observations at the subordinate location and its reference station. Because these figures are constant, they may not always provide for the daily variations of the actual tide, especially if the subordinate station is some distance from the reference station. Therefore, it must be realized that although the application of the time and height differences will generally provide reasonable accurate approximations, they cannot result in as accurate predictions as those for the reference stations which are bases upon much larger periods of analyses and which do provide for daily variations.

Time differences. — To determine the time of high water or low water at any station listed in this table there is given in the columns headed "Differences, Time" the hours and minutes to be added to or subtracted from the time of high or low water at some reference station. A plus (+) sign indicates that the tide at the subordinate station is later than at the reference station and the difference should be added, a minus (–) sign that it is earlier and should be subtracted.

To obtain the tide at a subordinate station on any date apply the difference to the tide at the reference station for that same date. In some cases, however, to obtain an A.M. tide it may be necessary to use the preceding day's P.M. tide at the reference station, or to obtain a P.M. tide it may be necessary to use the following day's A.M. tide. For example, if a high water occurs at a reference station at 2200 on July 2, and the tide at the subordinate station occurs 3 hours later, then high water will occur at 0100 on July 3 at the subordinate station. For the second case, if a high water at reference station occurs at 0200 on July 17, and the tide at the subordinate station occurs 5 hours earlier, the high water at the subordinate station will occur at 2100 on July 16. The necessary allowance for change in date when the international date line is crossed is included in the time differences. In such cases use the same date at the reference station as desired for the subordinate station as explained above.

The results obtained by the application of the time differences will be in the kind of time indicated by the time meridian shown above the name of the subordinate station. Summer or daylight saving time is not used in the tide tables.

Height differences. — The height of the tide, referred to the datum of charts, is obtained by means of the height differences or ratios. A plus (+) sign indicated that the difference should be added to the height at the reference station and a minus (–) sign that it should be subtracted. All height differences, ranges, and levels in table 1.2 are in feet but may be converted to meters by the use of table 3.4.

TABLE 1.2 —TIDAL DIFFERENCES AND OTHER CONSTANTS

Ratio. — For some stations height differences would give unsatisfactory predictions. In such cases they have been omitted and one or two ratios are given. Where two ratios are given, one in the "height of high water" column and one in the "height of low water" column, the high waters and low waters at the reference station should be multiplied by these respective ratios. Where only one is given, the omitted ratio is either unreliable or unknown.

Range. — The mean range is the difference in height between mean high water (MHW) and mean low water (MLW). The spring range is the average semi-diurnal range occurring semimonthly as a result of the Moon being new or full. It is larger than the mean range where the type of tide is either semidiurnal or mixed.

Mean Tide Level (Half-Tide Level). — The mean tide level is a plane midway between mean low water and mean high water. Tabular values are reckoned from chart depth.

NOTE - Dashes are entered in the place of data which are unknown, unreliable, or not applicable.

TABLE 1.2—TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring		
				High water	Low water	High water	Low water			
		M	W	h. m.	h. m.	ft	ft	ft	ft	ft
NEW YORK										
Long Island Sound, North Side										
Time meridian, 75°W										
1293	Throgs Neck.....	40 48	73 48	+0 08	+0 12	+0.98	+0.98	7.0	8.2	3.8
NEW YORK, East River										
1295	Whitestone.....	40 48	73 49	+0 04	+0 06	+1.00	+1.00	7.1	8.3	3.8
1297	Old Ferry Point.....	40 48	73 50	+0 10	+0 14	+0.99	+0.99	7.1	8.3	3.8
1299	College Point, Flushing Bay.....	40 47	73 51	+0 14	+0 13	+1.00	+0.95	6.8	7.9	3.7
1301	Northern Blvd. Bridge, Flushing Creek...	40 46	73 50	+0 29	+0 35	+0.95	+0.95	6.8	8.0	3.7
1303	Westchester, Westchester Creek.....	40 50	73 50	+0 16	+0 14	+0.98	+0.98	7.0	8.3	3.8
1305	Hunts Point.....	40 48	73 52	+0 11	+0 10	+0.97	+1.04	6.9	8.1	3.8
1307	Westchester Ave. Bridge, Bronx River...	40 50	73 53	+0 16	+0 15	+0.97	+0.97	6.9	8.1	3.7
1309	North Brother Island.....	40 48	73 54	+0 15	+0 15	+0.92	+0.92	6.6	7.8	3.6
1311	Port Morris (Stony Point).....	40 48	73 54	+0 04	+0 07	+0.89	+1.11	6.3	7.4	3.4
1313	Lawrence Point.....	40 47	73 55	+0 03	+0 11	+0.90	+0.90	6.4	7.6	3.5
1315	Wolcott Avenue.....	40 47	73 55	+0 03	+0 11	+0.85	+0.86	6.1	7.2	3.2
on WILLETS POINT, p.8										
on NEW YORK, p.12										
1317	Hell Gate, Wards Island.....	40 47	73 55	+2 58	+3 45	+1.33	+1.59	6.0	7.3	3.4
1319	Hell Gate, Halletts Point.....	40 47	73 56	+2 04	+2 07	+1.12	+1.14	5.1	6.1	2.7
1321	Horns Hook, East 90th Street.....	40 47	73 56	+1 52	+1 34	+1.02	+0.91	4.7	5.7	2.6
1323	Roosevelt Island, north end.....	40 46	73 56	+1 49	+1 28	+1.05	+1.05	4.8	5.8	2.6
1325	37th Avenue, Long Island City.....	40 46	73 57	+1 34	+1 13	+0.99	+1.00	4.5	5.5	2.4
1327	East 41st Street, New York City.....	40 45	73 58	+1 03	+0 46	+0.95	+1.09	4.3	5.2	2.4
1329	Hunters Point, Newtown Creek.....	40 44	73 57	+1 22	+0 56	+0.89	+0.90	4.1	4.9	2.2
1331	English Kills entrance, Newtown Creek...	40 43	73 55	+1 34	+1 07	+0.90	+0.90	4.2	5.0	2.3
1333	East 27th Street, Bellevue Hospital....	40 44	73 58	+1 12	+1 06	+0.92	+0.91	4.1	4.9	2.2
1335	East 19th Street, New York City.....	40 44	73 58	+1 06	+1 01	+0.90	+0.91	4.1	4.9	2.2
1337	North 3d Street, Brooklyn.....	40 43	73 58	+0 59	+0 45	+0.90	+0.90	4.1	4.9	2.2
1339	Williamsburg Bridge.....	40 43	73 58	+0 56	+0 41	+0.90	+0.91	4.1	4.9	2.2
1341	Wallabout Bay.....	40 42	73 58	+0 32	+0 22	+0.94	+1.05	4.3	5.2	2.4
1343	Brooklyn Bridge.....	40 42	74 00	+0 17	+0 10	+0.94	+0.95	4.3	5.2	2.3
Harlem River										
1345	East 110th Street, New York City....	40 47	73 56	+1 56	+1 38	+1.12	+1.14	5.1	6.1	2.8
1347	Randalls Island.....	40 48	73 56	+1 42	+1 27	+1.02	+1.09	4.6	5.6	2.6
1349	Madison Avenue Bridge.....	40 49	73 56	+1 56	+1 38	+1.08	+1.09	4.9	5.9	2.6
1351	Central Bridge.....	40 50	73 56	+1 56	+1 38	+1.03	+1.05	4.7	5.7	2.5
1353	Washington Bridge.....	40 51	73 56	+1 56	+1 38	+0.96	+0.96	4.4	5.2	2.4
1355	University Heights Bridge.....	40 52	73 55	+1 44	+1 33	+0.89	+0.89	4.0	4.8	2.2
1357	Broadway Bridge.....	40 52	73 55	+1 24	+1 23	+0.83	+0.82	3.8	4.6	2.1
1359	Spuyten Duyvil Bridge.....	40 53	73 56	+0 52	+0 48	+0.84	+0.85	3.8	4.7	2.1
Long Island Sound, South Side										
on WILLETS POINT, p.8										
1361	WILLETS POINT.....	40 48	73 47	Daily predictions				7.1	8.4	3.8
on SANDY HOOK, p.16										
1511	Jamaica Bay	40 35	73 55	+0 02	-0 03	+1.05	+1.05	4.9	5.9	2.6
1513	Plumb Beach Channel.....	40 35	73 53	-0 01	-0 04	+1.07	+1.05	5.0	6.0	2.7
1515	Barren Island, Rockaway Inlet.....	40 35	73 49	+0 37	+0 24	+1.09	+1.10	5.1	6.2	2.7
1517	Beach Channel (bridge).....	40 37	73 46	+0 39	+0 48	+1.16	+1.15	5.4	6.5	2.9
1519	Motts Basin.....	40 38	73 45	+0 38	+0 45	+1.16	+1.16	5.4	6.5	2.9
1521	Norton Point, Head of Bay.....	40 37	73 47	+0 25	+0 45	+1.14	+1.15	5.3	6.4	2.8
1523	J. F. K. International Airport.....	40 39	73 50	+0 43	+0 47	+1.12	+1.10	5.2	6.3	2.8
1525	Grassy Bay (bridge).....	40 38	73 53	+0 27	+0 08	+1.12	+1.10	5.2	6.3	2.8
1527	Canarsie.....	40 37	73 55	+0 28	+0 04	+1.12	+1.10	5.2	6.3	2.8
NEW YORK and NEW JERSEY										
New York Harbor										
1529	Coney Island.....	40 34	73 59	-0 04	-0 17	+1.01	+1.00	4.7	5.7	2.5
1531	Norton Point, Gravesend Bay.....	40 35	74 00	-0 01	+0 03	+1.02	+1.15	4.7	5.7	2.6
1533	Fort Wadsworth, The Narrows.....	40 36	74 03	+0 06	+0 06	+0.98	+1.05	4.8	5.4	2.5
1535	Fort Hamilton, The Narrows.....	40 37	74 02	+0 02	+0 07	+1.01	+1.00	4.7	5.7	2.5
on NEW YORK, p.12										
1537	Bay Ridge.....	40 38	74 02	-0 20	-0 21	+1.01	+1.00	4.6	5.5	2.5
1539	St. George, Staten Island.....	40 39	74 04	-0 17	-0 15	+0.99	+0.99	4.5	5.4	2.4
1541	Bayonne, N. J.....	40 41	74 06	-0 15	-0 05	+0.99	+0.99	4.5	5.4	2.4
1543	Gowanus Bay.....	40 40	74 01	-0 18	-0 12	+1.03	+0.95	4.7	5.7	2.6
1545	Governors Island.....	40 42	74 01	-0 07	-0 03	+0.96	+0.95	4.4	5.3	2.4
1547	NEW YORK (The Battery).....	40 42	74 01	Daily Predictions				4.6	5.5	2.5
Hudson River <1>										
1549	Jersey City, Con Rail RR. Ferry, N. J....	40 43	74 02	+0 11	+0 10	+0.96	+0.96	4.4	5.3	2.4
1551	New York, Desbrosses Street.....	40 43	74 01	+0 14	+0 13	+0.96	+0.95	4.4	5.3	2.4

<1> Values for the Hudson River above the George Washington Bridge are based upon averages for the six months May to October, when the freshwater discharge is at a maximum.

TABLE 1.2—TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring		
				High water	Low water	High water	Low water	ft	ft	
	Hudson River <1> Time meridian, 75°W	N	W	on NEW YORK, p.12				ft	ft	ft
1553	New York, Chelsea Docks.....	40 45	74 01	+0 21	+0 19	*0.94	*0.95	4.3	5.2	2.3
1555	Hoboken, Castle Point, N. J.....	40 45	74 01	+0 21	+0 19	*0.94	*0.94	4.3	5.2	2.3
1557	Weehawken, Days Point, N. J.....	40 46	74 01	+0 28	+0 26	*0.92	*0.92	4.2	5.0	2.3
1559	New York, Union Stock Yards.....	40 47	74 00	+0 31	+0 29	*0.92	*0.92	4.2	5.0	2.3
1561	New York, 130th Street.....	40 49	73 58	+0 41	+0 38	*0.88	*0.88	4.0	4.8	2.2
1563	George Washington Bridge.....	40 51	73 57	+0 50	+0 46	*0.84	*0.85	3.9	4.6	2.1
1565	Spuyten Duyvil, west of RR. bridge.....	40 53	73 56	+1 02	+0 56	*0.83	*0.83	3.8	4.5	2.1
1567	Riverdale.....	40 54	73 55	+0 48	+0 49	*0.85	*0.91	3.9	4.7	2.1
1569	Yonkers.....	40 56	73 54	+1 13	+1 13	*0.81	*0.82	3.7	4.4	2.0
1571	Dobbs Ferry.....	41 01	73 53	+1 33	+1 43	*0.74	*0.73	3.4	4.0	1.9
1573	Tarrytown.....	41 05	73 52	+1 49	+1 57	*0.70	*0.70	3.2	3.7	1.8
1575	Ossining.....	41 10	73 52	+1 57	+2 17	*0.68	*0.68	3.1	3.6	1.6
1577	Haverstraw.....	41 12	73 58	+2 03	+2 28	*0.64	*0.64	2.9	3.4	1.5
1579	Peekskill.....	41 17	73 56	+2 28	+3 03	*0.64	*0.64	2.9	3.4	1.8
1581	West Point.....	41 24	73 57	+3 20	+3 40	*0.59	*0.59	2.7	3.1	1.7
1583	Newburgh.....	41 30	74 00	+3 46	+4 03	*0.62	*0.64	2.8	3.2	1.5
1585	New Hamburg.....	41 35	73 57	+4 04	+4 28	*0.64	*0.64	2.9	3.3	1.6
1587	Poughkeepsie.....	41 42	73 57	+4 34	+4 46	*0.68	*0.68	3.1	3.5	1.7
1589	Hyde Park.....	41 47	73 57	+5 00	+5 12	*0.70	*0.68	3.2	3.6	1.8
1591	Kingston Point.....	41 56	73 58	+5 20	+5 34	*0.81	*0.82	3.7	4.2	2.0
1593	Tivoli.....	42 04	73 56	+5 50	+6 04	*0.86	*0.86	3.9	4.4	1.9
1595	Catskill.....	42 13	73 51	+6 41	+6 58	*0.84	*0.91	4.1	4.6	1.9
1597	Hudson.....	42 15	73 48	+6 58	+7 12	*0.88	*0.86	4.0	4.4	2.2
				on ALBANY, p.4						
1599	Coxsackie.....	42 21	73 48	-1 01	-1 38	-0.5	+0.2	3.9	4.3	2.1
1601	New Baltimore.....	42 27	73 47	-0 34	-0 56	-0.1	+0.4	4.1	4.5	2.4
1603	Castleton-on-Hudson.....	42 32	73 46	-0 17	-0 29	-0.2	+0.1	4.3	4.7	2.2
1605	ALBANY.....	42 39	73 45	Daily predictions				4.6	5.0	2.5
1607	Troy.....	42 44	73 42	+0 08	+0 10	*1.00	*1.00	4.7	5.1	2.3
	The Killis and Newark Bay			on NEW YORK, p.12						
1609	Kill Van Kull									
1611	Constable Hook.....	40 39	74 05	-0 30	-0 18	*0.99	*0.99	4.5	5.4	2.4
1613	New Brighton.....	40 39	74 05	-0 08	-0 15	*0.99	*1.00	4.5	5.4	2.4
1615	Port Richmond.....	40 38	74 08	+0 01	+0 08	*0.99	*0.99	4.5	5.4	2.4
1617	Bergen Point.....	40 39	74 08	+0 07	+0 06	*1.01	*1.01	4.6	5.5	2.5
1619	Shooters Island.....	40 39	74 10	+0 10	+0 21	*1.01	*1.01	4.6	5.5	2.5
1621	Port Elizabeth.....	40 40	74 08	-0 02	+0 15	*1.12	*1.14	5.1	6.2	2.8
1623	Port Newark Terminal.....	40 41	74 08	+0 03	+0 21	*1.12	*1.12	5.1	6.1	2.7
1625	Point No Point.....	40 44	74 07	0 00	+0 22	*1.15	*1.15	5.2	6.3	2.9
1627	Newark, Passaic River.....	40 44	74 10	+0 26	+0 55	*1.12	*1.12	5.1	6.1	2.7
1629	Belleville.....	40 47	74 09	+0 04	+0 43	*1.20	*1.14	5.5	6.7	3.0
	Passaic, Gregory Ave. bridge.....	40 51	74 07	+0 53	+2 00	*1.12	*1.12	5.1	6.1	2.7
1631	Hackensack River									
1633	Kearny Point.....	40 44	74 06	+0 13	+0 36	*1.10	*1.10	5.0	6.0	2.7
1635	Secaucus.....	40 48	74 04	+1 17	+1 12	*1.12	*1.12	5.1	6.1	2.8
1637	Little Ferry.....	40 51	74 02	+1 26	+1 17	*1.16	*1.16	5.3	6.4	3.0
	Hackensack.....	40 53	74 02	+1 37	+2 01	*1.16	*1.16	5.3	6.4	2.9
				on SANDY HOOK, p.16						
1639	Arthur Kill									
1641	Elizabethport.....	40 39	74 11	+0 24	+0 41	*1.05	*1.05	4.9	5.9	2.6
1643	Rahway River, R.R. Bridge.....	40 36	74 14	+0 17	+0 30	*1.14	*1.14	5.3	6.4	2.9
1645	Chelsea.....	40 36	74 12	+0 23	+0 37	*1.07	*1.05	5.0	6.0	2.7
1647	Carteret.....	40 35	74 13	+0 22	+0 33	*1.09	*1.09	5.1	6.2	2.8
1649	Rossville.....	40 33	74 13	+0 16	+0 27	*1.14	*1.14	5.3	6.4	2.8
1651	Woodbridge Creek.....	40 33	74 16	+0 08	+0 21	*1.10	*1.10	5.1	6.2	2.8
1653	Tottenville.....	40 31	74 15	+0 02	+0 15	*1.14	*1.14	5.3	6.4	2.8
	Perth Amboy.....	40 30	74 16	+0 12	+0 21	*1.12	*1.12	5.2	6.3	2.8
	Lower New York Bay, Raritan Bay, etc.									
1655	New Dorp Beach.....	40 34	74 06	-0 05	+0 06	*1.05	*1.05	4.9	5.9	2.6
1657	Great Kills Harbor.....	40 33	74 08	+0 06	+0 21	*1.01	*1.00	4.7	5.7	2.6
1659	Princes Bay.....	40 31	74 12	0 00	+0 06	*1.05	*1.05	4.9	5.9	2.6
	Raritan River									
1661	South Amboy.....	40 29	74 17	+0 04	+0 17	*1.06	*1.07	5.0	6.0	2.7
1663	Washington Canal.....	40 28	74 22	+0 33	+0 52	*1.20	*1.20	5.6	6.8	3.0
1665	South River highway bridge.....	40 27	74 22	+0 54	+1 04	*1.18	*1.18	5.5	6.7	3.0
1667	New Brunswick.....	40 29	74 26	+0 45	+1 28	*1.24	*1.24	5.8	7.0	3.1
1669	Cheesequake Creek.....	40 27	74 16	+0 12	+0 12	*1.09	*1.09	5.1	6.1	2.8
1671	Keyport.....	40 26	74 12	+0 07	+0 21	*1.07	*1.07	5.0	6.0	2.7
1673	Keansburg.....	40 27	74 09	-0 04	+0 01	*1.05	*1.05	4.9	5.9	2.6
1675	Port Monmouth.....	40 26	74 05	-0 03	0 00	*1.03	*1.03	4.8	5.8	2.6
1677	Atlantic Highlands.....	40 25	74 02	-0 02	+0 02	*1.01	*1.01	4.7	5.7	2.5
1679	SANDY HOOK.....	40 28	74 01	Daily predictions				4.7	5.6	2.4

<1> Values for the Hudson River above the George Washington Bridge are based upon averages for the six months May to October, when the freshwater discharge is at a maximum.

TABLE 1.2—TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring		
				High water	Low water	High water	Low water	ft	ft	
on SANDY HOOK, p.16										
NEW JERSEY Sandy Hook Bay Time meridian, 75°W										
	Shrewsbury River	40 24	73 59	+0 34	+0 57	*0.82	*0.82	3.8	4.6	2.1
1681	Highlands.....	40 21	74 04	+1 47	+2 25	*0.64	*0.64	3.0	3.6	1.6
1683	Red Bank, Navesink River.....	40 23	73 59	+1 08	+1 47	*0.62	*0.62	2.9	3.5	1.5
1685	Normandie.....	40 21	73 59	+2 09	+2 40	*0.36	*0.36	1.7	2.1	0.9
1687	Sea Bright.....	40 19	74 00	+2 59	+3 28	*0.36	*0.36	1.7	2.1	0.9
1689	Branchport, Pleasure Bay.....									
Outer Coast										
	Sea Bright.....	40 22	73 58	-0 35	-0 43	*0.94	*0.94	4.4	5.3	2.4
1691	Long Branch (fishing pier).....	40 18	73 59	-0 28	-0 36	*0.95	*0.95	4.4	5.3	2.4
1693	Asbury Park.....	40 13	74 00	-0 35	-0 43	*0.92	*0.92	4.3	5.2	2.3
1695	Shark River Inlet (entrance).....	40 11	74 01	-0 19	-0 34	*0.86	*0.86	4.0	4.8	2.2
1697	Municipal Boat Basin, Shark River.....	40 11	74 02	+0 26	+0 38	*0.79	*0.79	3.7	4.4	2.0
1699	Sea Girt.....	40 08	74 02	-0 35	-0 43	*0.92	*0.92	4.3	5.2	2.3
1701	Manasquan Inlet.....	40 06	74 02	-0 13	-0 34	*0.86	*0.86	4.0	4.8	2.2
1703	Manasquan River									
	Railroad bridge.....	40 06	74 03	+0 19	+0 07	*0.75	*0.75	3.5	4.2	1.9
1705	Riviera Beach.....	40 06	74 05	+0 50	+1 27	*0.67	*0.67	3.1	3.8	1.6
1707	Seaside Park (ocean).....	39 55	74 05	-0 34	-0 42	*0.90	*0.90	4.2	5.1	2.3
1709	Barnegat Bay									
	Mantoloking.....	40 02	74 03	+5 33	+5 36	*0.11	*0.11	0.5	0.6	0.2
1711	Coates Point, highway bridge.....	39 57	74 07	+4 18	+4 30	*0.11	*0.11	0.5	0.6	0.2
1713	Toms River (town).....	39 57	74 12	+4 36	+4 49	*0.13	*0.13	0.6	0.7	0.3
1715	Waretown.....	39 47	74 11	+2 32	+2 51	*0.13	*0.13	0.6	0.7	0.3
1717	Oyster Cr. Chan. (off Sedge Island).....	39 47	74 08	+2 15	+2 19	*0.13	*0.13	0.6	0.7	0.3
1719	Barnegat Inlet.....	39 46	74 06	-0 21	-0 19	*0.67	*0.67	3.1	3.8	1.6
1721	Harvey Cedars.....	39 42	74 08	+3 14	+4 04	*0.17	*0.17	0.8	1.0	0.4
1723	Little Egg Harbor									
	Manahawkin Bridge.....	39 39	74 11	+2 32	+3 22	*0.32	*0.32	1.5	1.8	0.8
1725	Long Point.....	39 36	74 16	+1 47	+1 58	*0.47	*0.47	2.2	2.7	1.2
1727	Parker Run.....	39 37	74 19	+2 00	+2 35	*0.46	*0.46	2.1	2.6	1.1
1729	Tuckerton Creek entrance.....	39 35	74 20	+1 39	+1 56	*0.52	*0.52	2.4	2.9	1.3
1731	Tuckerton, Tuckerton Creek.....	39 36	74 20	+1 41	+2 11	*0.47	*0.47	2.2	2.7	1.2
1733	Beach Haven.....	39 34	74 15	+1 46	+2 03	*0.47	*0.47	2.2	2.7	1.2
1735	Beach Haven Coast Guard Station.....	39 33	74 15	+1 12	+1 17	*0.48	*0.48	2.2	2.7	1.2
1737	Holgate.....	39 32	74 16	+1 10	+1 09	*0.56	*0.56	2.6	3.1	1.4
1739	Great Bay									
	Little Egg Inlet.....	39 30	74 18	-0 02	-0 01	*0.79	*0.79	3.7	4.5	2.0
1741	Little Sheepshead Creek.....	39 31	74 19	+0 30	+0 40	*0.68	*0.68	3.2	3.8	1.7
1743	Seven Islands.....	39 31	74 20	+0 11	+0 18	*0.73	*0.73	3.4	4.1	1.8
1745	Graveling Point.....	39 32	74 23	+0 38	+1 11	*0.69	*0.69	3.2	3.9	1.7
1747	Cramers Boatyard, Mullica River.....	39 33	74 28	+1 23	+1 57	*0.65	*0.65	3.0	3.6	1.7
1749	New Gretna.....	39 36	74 26	+1 47	+2 02	*0.68	*0.68	3.1	3.7	1.7
1751	Green Bank, Mullica River.....	39 37	74 35	+2 59	+3 16	*0.66	*0.66	3.1	3.7	1.7
1753	Main Marsh Thorofare.....	39 29	74 23	+1 03	+1 32	*0.71	*0.71	3.3	4.0	1.9
1755	Brigantine Channel.....	39 27	74 21	0 00	+0 05	*0.75	*0.75	3.5	4.2	1.9
1757	Grassy Bay.....	39 26	74 24	+1 07	+1 13	*0.73	*0.73	3.4	4.1	1.8
1759	Absecon Creek entrance, Absecon Bay.....	39 25	74 29	+1 03	+1 19	*0.77	*0.77	3.6	4.4	2.0
1761	Broad Creek, Middle Thorofare.....	39 24	74 26	+0 54	+0 35	*0.73	*0.73	3.4	4.1	1.8
1763	Absecon Channel.....	39 23	74 26	+0 11	-0 09	*0.84	*0.84	3.9	4.7	2.1
1765	Beach Thorofare (railroad bridges).....	39 22	74 27	+0 51	+0 42	*0.82	*0.82	3.8	4.6	2.1
1767	Atlantic City.....	39 21	74 28	+0 48	+0 47	*0.86	*0.86	4.1	5.0	2.2
1769	Chelsea (highway bridge).....	39 21	74 30	+0 38	+0 34	*0.84	*0.84	4.0	4.8	2.2
1771	Beach Thorofare (Shelter Island).....	39 21	74 32	+0 26	+0 24	*0.86	*0.86	3.9	4.7	2.2
1773	Dock Thorofare, Risley Channel.....	39 18	74 32	+0 04	+0 01	*0.79	*0.79	3.8	4.6	2.1
1775	Longport (inside).....	39 18	74 34	+0 11	-0 03	*0.82	*0.82	3.7	4.5	2.0
1777	Great Egg Harbor Inlet.....	39 17	74 35	+0 23	+0 21	*0.79	*0.79	3.6	4.4	2.0
1779	Ocean City (9th Street bridge).....	39 18	74 38	+0 43	+0 59	*0.77	*0.77			
1781	Great Egg Harbor Bay.....									
1783	Great Egg Harbor River									
	Scull Landing.....	39 22	74 43	+1 42	+1 56	*0.79	*0.79	3.7	4.5	2.0
1785	Mays Landing.....	39 27	74 44	+2 25	+2 38	*0.87	*0.87	3.9	4.7	2.1
1787	Cedar Swamp Creek.....	39 15	74 43	+2 50	+2 28	*0.68	*0.68	3.1	3.7	1.8
1789	Peck Bay (34th Street bridge).....	39 15	74 38	+0 50	+1 04	*0.79	*0.79	3.7	4.5	2.0
1791	Devils Island, Crook Horn Creek.....	39 14	74 39	+0 36	+0 24	*0.77	*0.77	3.6	4.4	2.0
1793	Corson Inlet (bridges).....	39 13	74 40	+0 08	+0 06	*0.84	*0.84	3.9	4.7	2.1
1795	Ben Hands Thorofare.....	39 12	74 40	+0 47	+0 34	*0.79	*0.79	3.7	4.5	2.0
1797	Sea Isle City (Ludlam Thoro. bridge).....	39 09	74 42	+0 44	+0 51	*0.82	*0.82	3.8	4.6	2.1
1799	Sea Isle City (beach).....	39 09	74 41	-0 20	-0 17	*0.88	*0.88	4.1	5.0	2.2
1801	Townsend Sound.....	39 09	74 45	+0 40	+1 03	*0.79	*0.79	3.7	4.5	2.0
1803	Townsend Inlet.....	39 07	74 43	+0 05	+0 06	*0.82	*0.82	3.8	4.6	2.1
1805	Long Reach.....	39 06	74 45	+0 52	+0 55	*0.82	*0.82	4.1	5.0	2.2
1807	Great Sound (ent. to Cresse Thoro.).....	39 05	74 47	+1 02	+1 07	*0.88	*0.88	4.1	5.0	2.2
1809	Stone Harbor (Great Chan. bridge).....	39 03	74 46	+0 41	+0 28	*0.88	*0.88	4.1	5.0	2.2
1811	Hereford Inlet (North Wildwood).....	39 01	74 48	+0 01	+0 04	*0.88	*0.88	4.1	5.0	2.2
1813	Wildwood (beach).....	38 59	74 48	-0 16	-0 17	*0.88	*0.88	4.1	5.0	2.2
1815	Grassy Sound Channel (hwy. bridge).....	39 02	74 49	+0 39	+0 30	*0.88	*0.88	4.1	5.0	2.2
1817	West Wildwood (Grassy Sound bridge).....	39 00	74 50	+0 44	+0 31	*0.92	*0.92	4.3	5.2	2.3
1819	Swain Channel.....	38 59	74 52	+0 53	+0 29	*0.94	*0.94	4.4	5.3	2.4
1821	Cape May Harbor.....	38 57	74 53	-0 03	-0 14	*0.94	*0.94	4.4	5.3	2.4
1823	Cape May, Municipal Pier.....	38 56	74 55	+0 01	-0 15	*0.92	*0.92	4.3	5.2	2.3
1825										

TABLE 1.2 —TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
NEW JERSEY and DELAWARE Delaware Bay, Eastern Shore Time meridian, 75°W										
on BREAKWATER HARBOR, p.20										
1827	Five Fathom Bank.....	38 51	74 38	-0 48	-0 38	*0.99	*0.99	4.1	4.9	2.2
1829	McCrife Shoal.....	38 51	74 51	-0 27	-0 21	*1.04	*1.04	4.3	5.2	2.3
1831	Cape May Point.....	38 56	74 58	-0 15	-0 04	*1.12	*1.12	4.7	5.6	2.5
1833	Cape May, ferry terminal.....	38 58	74 58	-0 09	-0 01	*1.19	*1.19	4.9	5.8	2.6
1835	Bay Shore Channel.....	38 58	74 58	-0 14	-0 03	*1.18	*1.18	4.9	5.8	2.6
1837	Miami Beach.....	39 02	74 56	+0 12	+0 26	*1.23	*1.23	5.1	6.1	2.7
1839	Bidwell Creek Entrance.....	39 08	74 54	+0 15	+0 46	*1.38	*1.38	5.8	6.8	3.1
1841	Dennis Creek entrance.....	39 10	74 54	+0 43	+1 04	*1.35	*1.35	5.6	6.6	3.0
1843	East Point, Maurice River Cove.....	39 12	75 02	+0 48	+1 12	*1.37	*1.37	5.7	6.7	3.0
	Maurice River									
1845	Port Norris.....	39 14	75 02	+1 09	+1 38	*1.37	*1.37	5.7	6.7	3.0
1847	Mauricetown.....	39 17	75 00	+1 43	+2 21	*1.40	*1.40	5.8	6.8	3.1
1849	Millville.....	39 24	75 02	+2 32	+3 23	*1.45	*1.45	6.0	7.0	3.2
1851	Egg Island Point.....	39 11	75 08	+0 28	+1 02	*1.37	*1.37	5.7	6.7	3.0
on REEDY POINT, p.24										
1853	Fortescue.....	39 14	75 10	-2 05	-2 19	*1.09	*1.09	5.9	7.0	3.1
1855	Ben Davis Point.....	39 17	75 17	-1 40	-1 49	*1.11	*1.11	6.0	6.9	3.2
	Cohansey River									
1857	Entrance.....	39 21	75 22	-1 30	-1 29	*1.11	*1.11	6.0	6.9	3.2
1859	Laning Wharf.....	39 23	75 20	-1 10	-1 14	*1.11	*1.11	6.0	6.8	3.2
1861	Fairton.....	39 23	75 14	+0 05	-0 24	*1.14	*1.14	6.2	7.0	3.3
1863	Bridgeton.....	39 25	75 14	+0 27	-0 13	*1.20	*1.20	6.5	7.3	3.4
1865	Bay Side.....	39 23	75 24	-1 23	-1 22	*1.13	*1.13	6.1	6.9	3.2
DEL., N.J., and PA. Delaware Bay, Central Lighthouses										
on BREAKWATER HARBOR, p.20										
1867	Brandywine Shoal Light.....	38 59	75 07	0 00	+0 24	*1.21	*1.21	5.0	6.0	2.7
1869	Fourteen Foot Bank Light.....	39 03	75 11	+0 13	+0 48	*1.25	*1.25	5.2	6.2	2.8
1871	Miah Maul Shoal Light.....	39 08	75 13	+0 23	+1 08	*1.33	*1.33	5.5	6.5	2.9
1873	Elbow of Cross Ledge Light.....	39 11	75 16	+0 35	+1 21	*1.35	*1.35	5.6	6.5	3.0
on REEDY POINT, p.24										
1875	Ship John Shoal Light.....	39 18	75 23	-1 32	-1 36	*1.05	*1.05	5.7	6.6	3.0
Delaware Bay, Western Shore										
on BREAKWATER HARBOR, p.20										
1877	Cape Henlopen.....	38 48	75 05	-0 10	-0 05	*0.99	*0.99	4.1	4.9	2.2
1879	BREAKWATER HARBOR.....	38 47	75 07					4.2	4.9	2.2
1881	Roosevelt Inlet.....	38 49	75 12	+0 04	+0 13	*1.06	*1.06	4.4	5.2	2.4
1883	Mispillion River entrance.....	38 57	75 19	+0 23	+0 51	*1.11	*1.00	4.6	5.5	2.5
1885	Murderkill River entrance.....	39 04	75 24	+0 40	+1 12	*1.10	*0.94	5.1	6.0	2.7
1887	St. Jones River entrance.....	39 04	75 24	+0 52	+1 33	*1.16	*1.16	4.8	5.7	2.6
1889	Mahon River entrance.....	39 11	75 24	+1 08	+1 52	*1.30	*1.30	5.4	6.3	2.9
1891	Leipsic River entrance.....	39 15	75 24	+1 13	+1 59	*1.33	*1.33	5.5	6.4	2.9
1893	Leipsic, Leipsic River.....	39 15	75 31	+3 37	+3 50	*0.84	*0.84	3.5	4.0	1.8
on REEDY POINT, p.24										
1895	Woodland Beach.....	39 20	75 28	-1 15	-1 14	*1.09	*1.09	5.9	6.8	3.0
Delaware River										
1897	Liston Point.....	39 25	75 32	-0 55	-0 59	*1.05	*1.05	5.7	6.4	3.0
1899	Taylor's Bridge, Blackbird Creek.....	39 24	75 36	+1 47	+0 54	*0.54	*0.54	2.9	3.3	1.5
1901	Reedy Island.....	39 31	75 34	-0 16	-0 16	*1.03	*1.03	5.6	6.2	3.0
1903	Salem, Salem River.....	39 35	75 28	+0 19	+0 20	*1.03	*1.03	5.6	6.1	3.0
1905	REEDY POINT.....	39 34	75 34					5.4	6.0	2.9
	Chesapeake and Delaware Canal									
1907	Biddle Point, Delaware.....	39 33	75 37	-0 05	+0 01	*0.94	*0.94	5.1	5.5	2.7
1909	Summit Bridge, Delaware.....	39 33	75 44	-0 34	-0 55	*0.65	*0.65	3.5	3.9	1.8
1911	Chesapeake City, Maryland.....	39 32	75 49	-0 40	-1 09	*0.50	*0.50	2.7	3.0	1.4
1913	Delaware City Branch Channel Bridge.....	39 34	75 35	+0 04	+0 06	*1.00	*0.84	5.4	6.0	2.9
1915	Pea Patch Island, Delaware.....	39 35	75 34	+0 07	0 00	*1.03	*0.95	5.6	6.2	3.0
1917	New Castle, Delaware.....	39 39	75 34	+0 30	+0 49	*1.03	*1.03	5.6	6.0	3.0
1919	Deepwater Point, N. J.....	39 42	75 31	+0 46	+1 11	*1.03	*1.03	5.6	6.0	3.0
	Christina River, Delaware									
1921	Christina River entrance.....	39 43	75 31	+0 51	+1 16	*1.03	*1.03	5.6	5.9	3.0
1923	Wilmington Marine Terminal.....	39 43	75 31	+0 54	+1 07	*0.98	*1.05	5.3	5.8	2.8
1925	Wilmington.....	39 44	75 33	+0 56	+1 27	*1.05	*1.05	5.7	6.0	3.0
1927	Millside R.R. Bridge.....	39 44	75 34	+1 12	+1 20	*0.98	*1.00	5.3	5.8	2.8
1929	Edgemoor, Del.....	39 45	75 30	+0 56	+1 12	*1.02	*1.11	5.5	6.1	3.0
1931	Oldmans Point, N. J.....	39 46	75 28	+1 03	+1 34	*1.03	*1.03	5.6	5.9	3.0
1933	Pedricktown, Oldmans Creek, N. J.....	39 46	75 24	+2 02	+2 01	*0.78	*0.78	4.1	4.5	2.3
on PHILADELPHIA, p.28										
1935	Marcus Hook, Pa.....	39 49	75 25	-1 15	-1 07	*0.91	*0.91	5.6	5.9	3.0
1937	Chester, Pa.....	39 51	75 21	-0 54	-0 46	*0.92	*0.92	5.7	6.0	3.0

TABLE 1.2—TIDAL DIFFERENCES AND OTHER CONSTANTS

51

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring		
				High water	Low water	High water	Low water			
		° ' "	° ' "	h. m.	h. m.	ft	ft	ft	ft	ft
NEW JERSEY and PENNSYLVANIA Delaware River—Continued Time meridian, 75°W		N	W	on PHILADELPHIA, p.28						
1939	Billingsport, N. J.....	39 51	75 14	-0 34	-0 26	*0.93	*0.93	5.7	6.0	3.0
1941	Mantua, Mantua Creek, N. J.....	39 48	75 11	+1 28	+0 50	*0.68	*0.68	4.1	4.4	2.3
1943	Fort Mifflin, Pa.....	39 52	75 13	-0 24	-0 16	*0.92	*0.92	5.7	6.0	3.0
1945	Woodbury Creek, N. J.....	39 52	75 11	-0 19	-0 23	*0.94	*0.94	5.8	6.1	3.1
	Schuylkill River									
1947	Girard Point, Pa.....	39 54	75 12	-0 20	-0 11	*0.92	*0.92	5.7	6.0	3.0
1949	Penrose Avenue Bridge, Pa.....	39 54	75 13	-0 28	-0 20	*0.94	*0.89	5.8	6.1	3.1
1951	Point Breeze, Pa.....	39 55	75 12	-0 16	-0 06	*0.94	*0.95	5.7	6.0	3.0
1953	Grays Ferry Bridge, Pa.....	39 57	75 12	-0 10	0 00	*0.95	*0.95	5.8	6.1	3.1
1955	Market Street Bridge, Pa.....	39 57	75 11	-0 26	-0 09	*0.97	*0.84	5.9	6.3	3.1
1957	Fairmount Bridge, Pa.....	39 58	75 11	-0 01	+0 10	*0.95	*0.95	5.8	6.1	3.1
1959	Philadelphia, South Broad St., Pa.....	39 53	75 11	-0 20	-0 12	*0.95	*0.95	5.8	6.1	3.1
1961	Gloucester City, N. J.....	39 54	75 08	-0 08	+0 01	*0.94	*0.94	5.8	6.1	3.1
1963	Philadelphia, Washington Ave., Pa.....	39 56	75 08	+0 01	+0 10	*0.97	*0.95	5.9	6.2	3.2
1965	PHILADELPHIA, Municipal Pier 11.....	39 57	75 08	Daily predictions				6.2	6.5	3.3
1967	Camden, Cooper Point, N. J.....	39 57	75 08	+0 09	+0 18	*0.96	*0.96	5.9	6.2	3.2
1969	Philadelphia, (old site) Pier 80 N, Pa..	39 58	75 07	+0 15	+0 25	*0.97	*0.95	5.9	6.2	3.2
1971	Philadelphia, Bridesburg, Pa.....	40 00	75 04	+0 31	+0 42	*0.98	*0.95	6.0	6.3	3.2
1973	Pompton Creek, N. J.....	40 01	75 00	+0 19	+0 37	*1.01	*1.01	6.3	6.7	3.3
1975	Bridgeboro, Rancocas Creek, N. J.....	40 02	74 56	+1 09	+1 09	*1.03	*1.03	6.4	6.7	3.4
1977	Hainesport, Rancocas Creek, N. J.....	39 59	74 49	+2 53	+2 56	*0.61	*0.61	3.6	3.8	2.0
1979	Torresdale, Pa.....	40 03	74 59	+1 03	+1 16	*1.02	*1.00	6.2	6.5	3.3
1981	Burlington, N. J.....	40 05	74 52	+1 27	+1 42	*1.05	*1.05	6.4	6.7	3.4
1983	Bristol, Pa.....	40 06	74 51	+1 34	+1 50	*1.06	*1.05	6.5	6.8	3.5
1985	Florence, N. J.....	40 07	74 48	+1 44	+2 04	*1.07	*1.07	6.6	6.9	3.5
1987	Bordentown, N. J.....	40 09	74 43	+1 46	+2 14	*1.10	*1.05	6.7	7.0	3.5
1989	Trenton, N. J.....	40 11	74 45	+1 52	+2 39	*1.11	*1.11	6.8	7.1	3.6
DELAWARE, Outer Coast				on SANDY HOOK, p.16						
1991	Rehoboth Beach.....	38 43	75 05	-0 08	-0 19	*0.84	*0.84	3.9	4.7	2.1
	Indian River									
1993	Inlet (bridge).....	38 37	75 04	+0 33	-0 16	*0.57	*0.57	2.7	3.2	1.4
1995	Inlet (Coast Guard Station).....	38 37	75 04	+0 46	+0 18	*0.45	*0.45	2.3	2.7	1.2
1997	Oak Orchard.....	38 36	75 10	+2 43	+3 13	*0.19	*0.19	0.9	1.1	0.5
1999	Possum Point.....	38 35	75 16	+3 08	+4 02	*0.21	*0.20	1.0	1.2	0.5
2001	Rehoboth Bay.....	- - -	- - -	- - -	- - -	- - -	- - -	0.5	0.6	0.2
2003	Fenwick Island Light.....	38 27	75 03	-0 14	-0 17	*0.80	*0.79	3.7	4.5	2.0
MARYLAND, Outer Coast										
2005	Ocean City (fishing pier).....	38 20	75 05	-0 23	-0 27	*0.75	*0.75	3.5	4.2	1.9
2007	Ocean City (Isle of Wight Bay).....	38 20	75 05	-0 15	-0 23	*0.47	*0.45	2.2	2.7	1.2
2009	North Beach Coast Guard Station.....	38 12	75 09	-0 29	-0 27	*0.73	*0.70	3.4	4.1	1.8
MARYLAND and VIRGINIA Chincoteague Bay										
2011	Assateague Beach, Toms Cove.....	37 52	75 22	+0 05	+0 18	*0.77	*0.75	3.6	4.4	2.0
2013	Harbor of Refuge.....	37 54	75 24	+0 06	+0 08	*0.55	*0.54	2.5	3.0	1.4
2015	Chincoteague Channel (south end).....	37 54	75 24	+0 14	+0 19	*0.47	*0.45	2.2	2.6	1.2
2017	Bogues Bay, Chincoteague Inlet.....	37 53	75 30	+0 37	+0 59	*0.64	*0.65	3.0	3.6	1.6
2019	Wishart Point, Bogues Bay.....	37 53	75 30	+0 19	+0 44	*0.55	*0.55	2.6	3.1	1.4
2021	Chincoteague Is., USCG Station.....	37 56	75 23	+0 31	+0 43	*0.35	*0.35	1.6	1.9	0.9
2023	Chincoteague Is., Lewis Creek.....	37 56	75 22	+0 51	+1 08	*0.28	*0.28	1.3	1.6	0.8
2025	Chincoteague Is., Oyster Bay.....	37 56	75 21	+1 17	+1 35	*0.32	*0.32	1.5	1.8	0.9
2027	Chincoteague Is., Blake Cove.....	37 57	75 21	+1 24	+2 02	*0.18	*0.18	0.9	1.1	0.5
2029	Franklin City.....	38 00	75 23	+1 53	+2 30	*0.14	*0.14	0.7	0.8	0.4
2031	George Island Landing.....	38 02	75 22	+2 52	+3 04	*0.13	*0.15	0.6	0.7	0.3
2033	Assacorkin Island.....	38 04	75 19	+3 32	+3 44	*0.10	*0.10	0.4	0.5	0.2
2035	Public Landing.....	38 09	75 17	+4 57	+5 29	*0.09	*0.10	0.4	0.5	0.2
VIRGINIA, Outer Coast										
2037	Wallops Island.....	37 50	75 29	-0 24	-0 30	*0.76	*0.75	3.6	4.4	1.9
2039	Gargathy Neck.....	37 47	75 34	+1 04	+0 58	*0.63	*0.65	3.0	3.6	1.6
2041	Metompkin Inlet.....	37 40	75 36	+0 34	+0 14	*0.78	*0.75	3.6	4.4	2.0
2043	Folly Creek, Metompkin Inlet.....	37 42	75 38	+0 57	+0 43	*0.69	*0.70	3.3	4.0	1.8
2045	Wachapreague Inlet (inside).....	37 35	75 37	+0 08	-0 05	*0.84	*0.85	3.9	4.7	2.1
2047	Quincy Inlet entrance.....	37 28	75 40	+0 03	-0 10	*0.86	*0.85	4.0	4.8	2.2
2049	The Swash, south end.....	37 30	75 40	+0 18	+0 16	*0.84	*0.85	3.9	4.7	2.1
2051	Great Machipongo Inlet (inside).....	37 24	75 43	+0 35	+0 25	*0.93	*0.85	3.9	4.7	2.1
2053	Upshur Neck, south end.....	37 28	75 48	+0 49	+0 54	*0.95	*0.95	4.4	5.3	2.4
2055	Sand Shoal Inlet (Coast Guard Station)..	37 18	75 47	+0 07	-0 09	*0.88	*0.85	4.1	4.9	2.2
2057	Ship Shoal Inlet.....	37 13	75 48	+0 25	+0 11	*0.86	*0.85	4.0	4.8	2.2
2059	Smith Island (Coast Guard Station).....	37 07	75 55	+0 22	+1 01	*0.75	*0.75	3.5	4.2	1.9
Chesapeake Bay, Eastern Shore				on HAMPTON ROADS, p.40						
2061	Fishermans Island.....	37 06	75 59	-0 43	-0 55	*1.23	*1.25	3.0	3.6	1.7
2063	Kiptopeke Beach.....	37 10	75 59	-0 39	-0 30	*1.08	*1.08	2.7	3.2	1.5

TABLE 1.2—TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring		
				High water	Low water	High water	Low water	ft	ft	
		° ' "	° ' "	h. m.	h. m.	ft	ft	ft	ft	ft
VIRGINIA		N	W	on HAMPTON ROADS, p.40						
Chesapeake Bay, Eastern Shore										
Time meridian, 75°W										
2065	Old Plantation Flats.....	37 14	76 03	-0 23	-0 10	*0.97	*1.00	2.4	2.9	1.3
2067	Cape Charles Harbor.....	37 16	76 01	-0 11	+0 01	*0.94	*0.92	2.3	2.8	1.3
2069	Nassawadox Creek.....	37 28	75 58	+1 00	+0 53	*0.73	*0.75	1.8	2.2	1.0
2071	Gaskins Point, Occochee Creek.....	37 33	75 55	+1 36	+2 08	*0.69	*0.67	1.7	2.0	0.9
2073	Pungoteague Creek.....	37 40	75 50	+2 26	+2 42	*0.69	*0.67	1.7	2.0	0.9
2075	Onancock, Onancock Creek.....	37 43	75 45	+2 56	+3 14	*0.73	*0.75	1.8	2.2	1.0
2077	Chesconessex Creek, Schomberg Bay.....	37 46	75 46	+2 47	+2 59	*0.82	*1.25	2.0	2.3	1.1
2079	Watts Island.....	37 48	75 54	+3 03	+3 07	*0.65	*0.67	1.6	1.9	0.9
2081	Tangier Sound Light.....	37 47	75 58	+2 55	+2 53	*0.66	*0.67	1.6	1.9	0.9
2083	Muddy Creek Entrance.....	37 51	75 40	+3 18	+3 48	*0.88	*0.92	2.2	2.6	1.2
2085	Guard Shore.....	37 51	75 42	+3 07	+3 42	*0.92	*0.92	2.3	2.7	1.3
MARYLAND										
Chesapeake Bay, Eastern Shore										
2087	Ape Hole Creek, Pocomoke Sound.....	37 58	75 49	+3 28	+3 53	*0.92	*0.92	2.3	2.8	1.2
	Pocomoke River									
2089	Shelbtown.....	37 59	75 38	+3 33	+4 11	*0.97	*1.00	2.4	2.9	1.3
2091	Pocomoke City.....	38 05	75 34	+5 50	+6 10	*0.66	*0.82	1.6	2.0	0.9
2093	Snowhill, city park.....	38 10	75 24	+7 36	+7 48	*0.77	*0.75	1.9	2.3	1.0
2095	James Island Light.....	37 58	75 55	+3 55	+3 55	*0.73	*0.75	1.8	2.2	1.0
2097	Crisfield, Little Annemessex River.....	37 59	75 52	+3 51	+4 00	*0.81	*0.83	2.0	2.4	1.1
MARYLAND										
Chesapeake Bay, Eastern Shore										
2099	Long Point, Big Annemessex River.....	38 03	75 48	+4 20	+4 41	*0.85	*0.83	2.1	2.5	1.1
2101	Teague Creek, Manokin River.....	38 06	75 50	+4 39	+5 00	*0.85	*0.83	2.1	2.5	1.1
2103	Ewell, Smith Island.....	38 00	76 02	+4 00	+4 26	*0.65	*0.67	1.6	1.9	0.9
2105	Solomons Lump Light.....	38 03	76 01	+4 17	+4 20	*0.67	*0.67	1.7	2.0	0.9
2107	Holland Island Bar Light.....	38 04	76 06	+4 17	+4 25	*0.58	*0.58	1.4	1.7	0.8
2109	Chance.....	38 10	75 57	+4 41	+4 53	*0.88	*0.92	2.2	2.6	1.2
2111	Sharkfin Shoal Light.....	38 12	75 59	+4 47	+5 01	*0.88	*0.88	2.2	2.6	1.2
2113	Great Shoals Light, Montic Bay.....	38 13	75 53	+5 01	+5 17	*0.92	*0.92	2.3	2.8	1.3
	Wicomico River									
2115	Whitehaven.....	38 16	75 47	+5 28	+5 42	*0.96	*0.96	2.4	2.9	1.3
2117	Salisbury.....	38 22	75 36	+6 22	+6 19	*1.24	*1.25	3.0	3.6	1.7
	Nanticoke River									
2119	Roaring Point.....	38 16	75 55	+5 01	+5 30	*0.92	*0.92	2.3	2.8	1.3
2121	Vienna.....	38 29	75 49	+7 42	+7 45	*0.89	*0.92	2.2	2.6	1.3
2123	Sharptown.....	38 32	75 43	+8 20	+8 23	*1.00	*1.00	2.5	3.0	1.4
2125	Fishing Point, Fishing Bay.....	38 18	76 01	+5 05	+5 29	*1.00	*1.00	2.5	3.0	1.3
2127	Hooper Strait Light.....	38 14	76 05	+4 56	+5 02	*0.69	*0.67	1.7	2.0	0.9
on BALTIMORE, p.32										
2129	Hooper Island Light.....	38 15	76 15	-5 03	-5 13	*1.36	*1.38	1.5	1.8	1.0
2131	Hooper Island.....	38 18	76 12	-4 56	-4 41	*1.36	*1.38	1.5	1.7	1.1
2133	Barren Island.....	38 20	76 16	-4 48	-4 57	*1.14	*1.17	1.3	1.5	0.9
	Little Choptank River									
2135	Taylor's Island, Slaughter Creek.....	38 28	76 18	-3 05	-3 15	*1.08	*1.08	1.2	1.4	0.9
2137	Woolford, Church Creek.....	38 30	76 10	-3 21	-3 00	*1.27	*1.29	1.4	1.6	1.0
2139	Cherry Island, Beckwiths Creek.....	38 34	76 13	-3 17	-3 01	*1.17	*1.17	1.3	1.5	0.9
2141	Hudson Creek.....	38 35	76 15	-3 45	-3 21	*1.27	*1.29	1.4	1.6	1.0
2143	Sharps Island Light.....	38 38	76 23	-3 47	-3 50	*1.18	*1.17	1.3	1.5	0.9
	Choptank River									
2145	Choptank River Light.....	38 39	76 11	-3 13	-3 08	*1.27	*1.29	1.4	1.6	1.0
2147	Cambridge.....	38 34	76 04	-2 44	-2 41	*1.47	*1.42	1.6	1.7	1.1
2149	Choptank.....	38 41	75 57	-2 09	-1 48	*1.46	*1.46	1.6	1.8	1.2
2151	Dover Bridge.....	38 45	76 00	-0 34	-0 43	*1.54	*1.54	1.7	1.9	1.2
2153	Denton.....	38 53	75 50	+0 17	+0 32	*1.98	*2.00	2.2	2.5	1.6
2155	Greensboro.....	38 58	75 49	+1 22	+1 18	*2.27	*2.29	2.5	2.9	1.8
2157	Wayman Wharf, Tuckahoe Creek.....	38 53	75 57	+0 57	+0 35	*2.17	*2.17	2.4	2.8	1.7
	Tred Avon River									
2159	Oxford.....	38 42	76 10	-3 01	-2 50	*1.27	*1.29	1.4	1.6	1.0
2161	Easton Point.....	38 46	76 06	-2 55	-2 40	*1.46	*1.46	1.6	1.8	1.2
2163	Deep Neck Point, Broad Creek.....	38 44	76 14	-3 06	-2 51	*1.29	*1.29	1.4	1.6	1.0
2165	St. Michaels, San Domingo Creek.....	38 46	76 14	-3 04	-2 56	*1.27	*1.29	1.4	1.6	1.0
2167	Avalon, Dogwood Harbor.....	38 42	76 20	-3 04	-2 53	*1.14	*1.17	1.3	1.5	0.9
2169	Poplar Island.....	38 46	76 23	-3 08	-3 08	*1.09	*1.09	1.2	1.3	0.9
2171	Ferry Cove, Eastern Bay.....	38 46	76 20	-2 57	-2 54	*0.90	*0.92	1.0	1.2	0.7
2173	Claiborne, Eastern Bay.....	38 50	76 17	-2 36	-2 33	*1.00	*1.00	1.1	1.3	0.7
2175	St. Michaels, Miles River.....	38 47	76 13	-2 14	-1 58	*1.08	*1.08	1.2	1.4	0.9
2177	Wye Landing, Wye East River.....	38 54	76 06	-2 01	-1 41	*1.18	*1.16	1.3	1.5	0.9
2179	Kent Island Narrows.....	38 58	76 15	-1 40	-1 28	*1.08	*1.08	1.2	1.4	0.9
2181	Matapeake, Kent Island.....	38 58	76 21	-1 29	-1 48	*0.89	*0.89	1.0	1.1	0.7
2183	Bloody Point Bar Light.....	38 50	76 24	-2 42	-2 44	*1.00	*1.00	1.1	1.3	0.7
	Chester River									
2185	Love Point.....	39 02	76 18	-0 20	-0 36	*1.00	*1.00	1.1	1.3	0.8
2187	Queenstown.....	39 00	76 10	-0 04	-0 14	*1.18	*1.17	1.3	1.5	0.9

TABLE 1.2—TIDAL DIFFERENCES AND OTHER CONSTANTS

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NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring		
				High water	Low water	High water	Low water			
		° ' "	° ' "	h. m.	h. m.	ft	ft	ft	ft	ft
Chesapeake Bay, Eastern Shore		N	W	on BALTIMORE, p.32						
Time meridian, 75°W										
2189	Shipyard Landing, Langford Creek....	39 10	76 11	+0 18	+0 15	*1.35	*1.33	1.5	1.7	1.0
2191	Centreville Landing, Corsica River..	39 03	76 04	+0 10	+0 09	*1.46	*1.46	1.6	1.8	1.2
2193	Cliffs Point.....	39 06	76 08	+0 02	-0 07	*1.36	*1.38	1.5	1.7	1.0
2195	Cliffs Wharf.....	39 07	76 08	+0 02	-0 04	*1.36	*1.38	1.5	1.7	1.1
2197	Chestertown.....	39 12	76 04	+0 47	+0 34	*1.63	*1.63	1.8	2.1	1.3
2199	Crumpton.....	39 15	75 56	+1 22	+1 23	*2.17	*2.17	2.4	2.8	1.7
2201	Millington.....	39 15	75 50	+2 07	+2 40	*1.80	*1.79	2.0	2.3	1.4
2203	Deep Landing, Swan Creek.....	39 09	76 16	-0 08	-0 09	*1.00	*1.00	1.1	1.3	0.7
2205	Tolchester.....	39 13	76 15	+0 28	+0 23	*1.08	*1.08	1.2	1.4	0.8
2207	Worton Creek entrance.....	39 18	76 10	+1 11	+1 13	*1.18	*1.17	1.3	1.5	0.9
Sassafras River										
2209	Betterton.....	39 22	76 04	+2 31	+2 18	*1.45	*1.45	1.6	1.8	0.8
2211	Georgetown.....	39 22	75 53	+2 05	+2 05	*1.83	*1.83	2.0	2.3	1.4
Elk River										
2213	Town Point Wharf.....	39 30	75 55	+3 17	+3 00	*1.86	*1.88	2.1	2.4	1.5
2215	Courthouse Point.....	39 31	75 53	+2 53	+2 48	*2.00	*2.00	2.2	2.5	1.5
C & D Canal (See Delaware River)....		- -	- -	- -	- -	- -	- -	- -	- -	- -
2217	Old Frenchtown Wharf.....	39 34	75 51	+3 04	+2 55	*2.08	*2.08	2.3	2.6	1.6
2219	Charlestown, Northeast River.....	39 34	75 58	+3 42	+3 58	*1.71	*1.71	1.9	2.2	1.3
Chesapeake Bay, Western Shore										
Susquehanna River										
2221	Havre de Grace.....	39 32	76 05	+3 11	+3 30	*1.59	*1.59	1.8	1.9	1.3
2223	Port Deposit.....	39 36	76 07	+4 04	+4 58	*1.90	*1.92	2.1	2.4	1.5
2225	Fishing Battery Light.....	39 30	76 05	+2 33	+2 41	*1.90	*1.92	2.1	2.4	1.5
2227	Pond Point.....	39 23	76 15	+1 37	+1 42	*1.27	*1.29	1.4	1.6	1.0
2229	Pooles Island.....	39 17	76 16	+0 55	+0 49	*1.09	*1.08	1.2	1.4	0.9
2231	Battery Point, Gunpowder River.....	39 20	76 20	+1 04	+1 10	*1.08	*1.08	1.2	1.4	0.9
2233	Bowley Bar, Middle River.....	39 18	76 23	+0 51	+0 43	*1.08	*1.08	1.2	1.4	0.9
2235	Rocky Point, Back River.....	39 15	76 24	+0 46	+0 38	*1.00	*1.00	1.1	1.2	0.8
2237	Sevenfoot Knoll Light.....	39 09	76 25	-0 06	-0 10	*0.82	*0.83	0.9	1.1	0.6
Patapsco River										
2239	North Point.....	39 12	76 27	+0 02	-0 01	*0.94	*1.00	1.0	1.2	0.8
2241	Fort Carroll.....	39 13	76 31	+0 03	+0 11	*1.00	*1.00	1.1	1.3	0.8
2243	BALTIMORE, Fort McHenry.....	39 16	76 35	Daily predictions				1.1	1.3	0.8
2245	Fells Point, Baltimore Harbor.....	39 17	76 35	+0 09	+0 16	*1.08	*1.08	1.2	1.3	0.9
2247	Middle Branch, Baltimore Harbor.....	39 16	76 38	+0 26	+0 28	*0.90	*0.92	1.0	1.2	0.7
2249	Mountain Point, Magothy River.....	39 04	76 26	-0 14	-0 09	*0.71	*0.71	0.8	1.0	0.6
2251	Sandy Point.....	39 01	76 23	-1 21	-1 25	*0.71	*0.71	0.8	0.9	0.6
2253	Greenbury Point Shoal Light.....	38 58	76 27	-1 46	-1 50	*0.72	*0.71	0.8	0.9	0.6
Severn River										
2255	Cedar Point.....	39 04	76 34	-0 47	-0 49	*0.62	*0.62	0.7	0.8	0.6
2257	Brewer Point.....	39 02	76 32	-1 00	-1 00	*0.71	*0.71	0.8	0.9	0.6
2259	Annapolis.....	38 59	76 29	-1 38	-1 49	*0.81	*0.83	0.9	1.1	0.7
2261	Bay Ridge.....	38 56	76 27	-2 01	-2 05	*0.74	*0.70	0.8	1.0	0.6
2263	Thomas Point Shoal Light.....	38 54	76 26	-2 04	-2 16	*0.81	*0.83	0.9	1.0	0.6
2265	Edgewater, South River.....	38 57	76 33	-2 01	-2 12	*0.81	*0.83	0.9	1.0	0.6
2267	Gingerville Creek, South River.....	38 58	76 33	-2 09	-2 00	*0.90	*0.92	1.0	1.1	0.7
2269	Rhode River (County Wharf).....	38 53	76 32	-2 04	-2 14	*0.91	*0.92	1.0	1.1	0.7
2271	Shady Side, West River.....	38 51	76 31	-1 58	-1 48	*0.81	*0.83	0.9	1.0	0.6
2273	Galesville, West River.....	38 50	76 32	-1 48	-1 38	*0.81	*0.83	0.9	1.0	0.6
2275	Fairhaven, Herring Bay.....	38 45	76 33	-2 55	-3 01	*0.81	*0.83	0.9	1.0	0.6
2277	Rose Haven.....	38 43	76 32	-2 47	-2 49	*0.81	*0.83	0.9	1.0	0.6
2279	Chesapeake Beach.....	38 41	76 32	-2 52	-3 04	*0.91	*0.92	1.0	1.1	0.7
2281	Plum Point.....	38 37	76 31	-3 30	-3 33	*0.82	*0.83	0.9	1.0	0.6
2283	Long Beach.....	38 28	76 28	-4 10	-4 12	*0.90	*0.92	1.0	1.2	0.7
2285	Cove Point.....	38 23	76 23	-4 05	-4 27	*1.17	*1.17	1.3	1.5	0.9
Patuxent River										
2287	Drum Point.....	38 19	76 25	-4 51	-5 01	*1.11	*1.08	1.2	1.4	0.9
2289	Solomons Island.....	38 19	76 27	-4 45	-4 52	*1.07	*1.08	1.2	1.3	0.9
2291	Broomes Island.....	38 25	76 33	-4 29	-4 21	*1.17	*1.17	1.3	1.5	0.9
2293	Benedict.....	38 31	76 40	-4 10	-3 56	*1.45	*1.45	1.6	1.9	0.8
2295	Lower Marlboro.....	38 39	76 41	-2 59	-2 55	*1.62	*1.63	1.8	2.0	1.3
2297	Nottingham.....	38 43	76 42	-2 47	-2 29	*2.29	*2.29	2.5	2.9	1.8
2299	Hills Bridge (Route 4).....	38 48	76 43	-1 07	-0 38	*2.17	*2.17	2.4	2.8	1.7
2301	Cedar Point.....	38 18	76 22	-4 54	-5 02	*1.08	*1.08	1.2	1.4	0.9
2303	Point No Point.....	38 08	76 18	-5 27	-5 39	*1.18	*1.17	1.3	1.5	0.9
2305	Point Lookout.....	38 02	76 19	-5 26	-5 36	*1.11	*1.08	1.2	1.4	0.9
MD., VA. and DISTRICT OF COLUMBIA				on WASHINGTON, p.36						
Potomac River										
2307	Cornfield Harbor, Md.....	38 04	76 22	-6 29	-7 29	*0.48	*0.47	1.3	1.5	0.8
2309	Lewisetta, Va.....	38 00	76 28	-6 22	-7 19	*0.46	*0.46	1.3	1.5	0.6
2311	Travis Point, Coan River, Va.....	38 00	76 28	-6 18	-6 59	*0.44	*0.41	1.2	1.4	0.7
Yeocomico River										
2313	Lynch Point, Va.....	38 03	76 31	-6 09	-6 52	*0.48	*0.47	1.3	1.5	0.7
2315	Kinsale, Va.....	38 02	76 35	-6 04	-6 47	*0.44	*0.41	1.2	1.4	0.7

TABLE 1.2—TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring		
				High water	Low water	High water	Low water			
		N	W	h. m.	h. m.	ft	ft	ft	ft	
MD., VA. and DISTRICT OF COLUMBIA		on WASHINGTON, p.36								
Potomac River										
Time meridian, 75°W										
2317	St. Marys River	38 06	76 25	-6 36	-7 17	*0.55	*0.53	1.5	1.7	0.8
2319	Kitts Point, Md.....	38 11	76 26	-6 21	-7 02	*0.55	*0.53	1.5	1.7	0.8
2321	St. Marys City, Md.....	38 08	76 32	-6 12	-7 10	*0.52	*0.53	1.4	1.6	0.8
2323	Piney Point, Md.....	38 08	76 37	-5 53	-6 57	*0.55	*0.53	1.5	1.7	0.9
2325	Ragged Point, Coles Neck, Va.....	38 09	76 38	-5 55	-6 49	*0.66	*0.64	1.8	2.0	1.0
2327	Coles Point, Va.....	38 17	76 38	-5 50	-6 33	*0.62	*0.59	1.7	2.0	0.9
2329	Leonardtown, Breton Bay, Md.....	38 16	76 42	-5 45	-6 28	*0.64	*0.64	1.8	2.1	0.9
2331	Shipping Pt., St. Clements Bay, Md.....	38 06	76 44	-5 09	-5 48	*0.55	*0.55	1.5	1.7	0.8
2333	Mount Holly, Nomin Creek, Va.....	38 13	76 45	-5 31	-6 38	*0.66	*0.65	1.8	2.0	1.0
Colton's Point, Md.....										
Wicomico River										
2335	Cobb Point Bar Light, Md.....	38 15	76 50	-5 41	-6 22	*0.69	*0.71	1.9	2.2	1.0
2337	Rock Point, Md.....	38 16	76 50	-5 36	-6 17	*0.69	*0.71	1.9	2.2	1.0
2339	Bushwood Wharf, Md.....	38 17	76 48	-5 36	-6 17	*0.69	*0.70	1.9	2.2	1.0
2341	Wicomico Beach, Md.....	38 20	76 52	-5 23	-5 59	*0.66	*0.65	1.8	2.0	1.0
2343	Colonial Beach, Va.....	38 15	76 58	-5 27	-6 12	*0.58	*0.58	1.7	1.9	0.9
2345	Dahlgren, Upper Machodoc Creek, Va.....	38 19	77 02	-5 00	-5 45	*0.59	*0.59	1.6	1.8	0.9
2347	Lower Cedar Point, Md.....	38 20	76 59	-5 05	-5 50	*0.55	*0.53	1.5	1.7	0.8
2349	Mathias Point, Va.....	38 24	77 03	-4 17	-4 50	*0.45	*0.45	1.2	1.4	0.7
2351	Goose Bay, Port Tobacco River, Md.....	38 27	77 03	-4 20	-5 01	*0.55	*0.53	1.5	1.7	0.8
2353	Upper Cedar Point Light, Md.....	38 24	77 05	-4 08	-4 47	*0.43	*0.43	1.2	1.4	0.6
2355	Riverside, Md.....	38 23	77 09	-3 35	-4 19	*0.48	*0.47	1.3	1.5	0.7
2357	Maryland Point Light, Md.....	38 21	77 12	-3 12	-3 38	*0.41	*0.41	1.1	1.3	0.7
2359	Aquia Creek, Va.....	38 25	77 21	-1 46	-2 26	*0.45	*0.45	1.3	1.5	0.7
2361	Clifton Beach, Md.....	38 25	77 16	-2 00	-2 40	*0.43	*0.41	1.1	1.3	0.6
2363	Liverpool Point, Md.....	38 28	77 16	-2 07	-2 33	*0.48	*0.47	1.3	1.5	0.7
2365	Quantico Creek, Va.....	38 31	77 17	-1 04	-1 59	*0.51	*0.47	1.4	1.6	0.8
2367	Deep Point, Mattawoman Creek, Md.....	38 34	77 13	-1 12	-1 38	*0.58	*0.59	1.6	1.8	0.9
2369	High Point, Occoquan Bay, Va.....	38 37	77 12	-1 02	-1 28	*0.57	*0.59	1.6	1.8	0.9
2371	Indian Head, Md.....	38 36	77 11	-0 26	-1 28	*0.66	*0.65	1.8	2.0	1.0
2373	Glymont, Md.....	38 37	77 08	-0 47	-1 13	*0.65	*0.65	1.8	2.1	1.0
2375	Gunston Cove, Va.....	38 40	77 08	-0 28	-0 54	*0.72	*0.71	2.0	2.3	1.1
2377	Marshall Hall, Md.....	38 41	77 06	-0 02	-0 50	*0.83	*0.82	2.3	2.6	1.3
2379	Mount Vernon, Va.....	38 42	77 05	-0 17	-0 42	*0.79	*0.82	2.2	2.5	1.2
2381	Fort Washington, Md.....	38 43	77 02	-0 07	-0 32	*0.88	*0.88	2.4	2.8	1.4
2383	Riverview, Md.....	38 43	77 02	-0 07	-0 32	*0.92	*0.88	2.5	2.9	1.4
2385	Alexandria, Va.....	38 48	77 02	+0 08	-0 17	*1.00	*1.00	2.8	3.2	1.6
2387	Bellevue, D. C.....	38 50	77 02	+0 16	-0 04	*1.03	*1.00	2.8	3.2	1.6
2389	Washington National Airport.....	38 51	77 02	+0 16	-0 02	*1.07	*1.06	2.9	3.3	1.7
2391	WASHINGTON, Washington Chan., D. C.....	38 52	77 01	Daily predictions				2.8	3.0	1.6
Anacostia River										
2393	Anacostia Bridge, D. C.....	38 52	77 00	+0 25	+0 06	*1.06	*1.06	2.9	3.3	1.7
2395	Benning Bridge, D. C.....	38 54	76 58	+0 31	+0 10	*1.07	*1.06	2.9	3.3	1.2
2397	Key Bridge, D. C.....	38 54	77 04	+0 25	+0 06	*1.03	*1.00	2.8	3.2	1.6
2399	Chain Bridge, one mile below, D. C.....	38 55	77 06	+0 30	+0 11	*1.03	*1.00	2.8	3.2	1.6
2401	Chain Bridge, D. C.....	38 56	77 07	+0 35	+0 16	*1.03	*1.00	2.8	3.2	1.6
VIRGINIA—Continued		on HAMPTON ROADS, p.40								
Chesapeake Bay, Western Shore—Con.										
2403	Smith Point Light.....	37 53	76 11	+3 30	+3 30	*0.50	*0.50	1.2	1.4	0.7
2405	Sunnybank, Little Wicomico River.....	37 53	76 16	+5 42	+5 40	*0.31	*0.31	0.8	1.0	0.4
2407	Great Wicomico River Light.....	37 48	76 16	+2 59	+3 06	*0.44	*0.44	1.1	1.3	0.5
2409	Fleet Point.....	37 49	76 16	+2 59	+3 09	*0.42	*0.42	1.1	1.3	0.6
2411	Glebe Pt., Great Wicomico River.....	37 51	76 22	+3 16	+3 32	*0.50	*0.50	1.2	1.4	0.7
2413	Dividing Creek.....	37 44	76 18	+2 38	+2 36	*0.44	*0.44	1.1	1.3	0.5
2415	Windmill Point Light.....	37 36	76 14	+1 48	+2 06	*0.42	*0.42	1.1	1.3	0.5
2417	Stingray Point.....	37 34	76 18	+1 05	+1 27	*0.50	*0.50	1.2	1.4	0.7
Rappahannock River										
2419	Windmill Point.....	37 37	76 17	+1 56	+2 13	*0.50	*0.50	1.2	1.5	0.7
2421	Mill Creek.....	37 35	76 25	+2 23	+2 37	*0.54	*0.54	1.3	1.6	1.4
2423	Orchard Point.....	37 39	76 27	+2 29	+2 46	*0.58	*0.58	1.4	1.7	0.8
2425	Millenbeck, Corrotoman River.....	37 40	76 29	+2 32	+3 00	*0.54	*0.54	1.3	1.6	0.7
2427	Urbanna.....	37 39	76 34	+2 45	+3 04	*0.58	*0.58	1.4	1.7	0.8
2429	Bayport.....	37 45	76 40	+3 17	+3 46	*0.65	*0.65	1.6	1.9	0.9
2431	Bowlers Rock.....	37 49	76 44	+3 53	+4 20	*0.73	*0.75	1.8	2.2	1.0
2433	Wares Wharf.....	37 52	76 47	+4 02	+4 28	*0.73	*0.75	1.8	2.1	1.0
2435	Tappahannock.....	37 56	76 51	+4 35	+5 13	*0.69	*0.69	1.7	1.9	1.0
		on WASHINGTON, p.36								
2437	Leedstown.....	38 07	77 00	-4 31	-4 49	*0.53	*0.53	1.5	1.7	0.8
2439	Saunders Wharf.....	38 05	77 02	-4 11	-4 35	*0.54	*0.54	1.5	1.7	0.9
2441	Green Bay.....	38 09	77 05	-3 21	-3 39	*0.61	*0.61	1.7	2.0	0.9
2443	Port Royal.....	38 10	77 11	-2 31	-2 49	*0.68	*0.68	1.9	2.2	1.1
2445	Hopyard Landing.....	38 15	77 14	-1 25	-1 51	*0.76	*0.76	2.1	2.3	1.2
2447	Corbins Neck.....	38 13	77 17	-1 18	-1 20	*0.96	*0.94	2.6	3.0	1.5
2449	Massaponax.....	38 15	77 25	-0 57	-0 35	*0.90	*0.88	2.5	2.8	1.4
2451	Fredericksburg.....	38 18	77 27	-0 48	-0 51	*1.03	*1.00	2.8	3.2	1.6

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NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean Spring	Mean Neap	
				High water	Low water	High water	Low water			
		N	W	h. m.	h. m.	ft	ft	ft	ft	ft
on HAMPTON ROADS, p. 40										
VIRGINIA-Continued										
Chesapeake Bay, Western Shore-Con.										
Time meridian, 75°W										
2453	Piankatank River	37 31	76 18	+0 47	+1 02	*0.50	*0.50	1.2	1.4	0.7
2455	Cherry Point.....	37 33	76 20	+1 31	+1 59	*0.50	*0.50	1.2	1.4	0.7
2457	Jackson Creek.....	37 30	76 25	+1 29	+2 07	*0.54	*0.50	1.3	1.6	0.7
2459	Dixie.....	37 23	76 11	-0 07	+0 27	*0.65	*0.65	1.6	1.9	0.9
2461	Wolf Trap Light.....	37 18	76 17	-0 07	+0 01	*0.93	*0.92	2.3	2.8	1.2
2463	Mobjack Bay	37 22	76 21	-0 22	-0 03	*0.97	*1.00	2.4	2.9	1.3
2465	New Point Comfort.....	37 25	76 26	-0 11	-0 05	*1.00	*1.00	2.5	3.0	1.4
2467	Mobjack, East River.....	37 18	76 24	-0 13	+0 01	*1.00	*1.00	2.4	2.9	1.4
2469	Belleville.....	37 18	76 27	-0 02	+0 06	*1.00	*1.00	2.5	3.0	1.1
2471	Browns Bay.....	37 13	76 15	-0 17	-0 09	*0.92	*0.92	2.3	2.8	1.3
SW. Branch, Severn River.....										
York Spit Light.....										
York River										
2473	Tue Marshes Light.....	37 14	76 23	-0 05	-0 02	*0.88	*0.92	2.2	2.6	1.2
2475	Perrin River.....	37 16	76 25	+0 13	+0 03	*1.00	*0.92	2.3	2.8	1.2
2477	Goodwin Neck.....	37 14	76 26	+0 13	+0 10	*0.88	*0.92	2.2	2.6	1.2
2479	Quarter Point.....	37 15	76 27	+0 08	+0 06	*0.93	*0.92	2.3	2.8	1.2
2481	Gloucester Point.....	37 15	76 30	+0 11	+0 07	*0.98	*0.98	2.4	2.8	1.3
2483	Yorktown.....	37 14	76 30	+0 11	+0 06	*0.96	*1.00	2.4	2.9	1.3
2485	Mumfords Islands.....	37 16	76 31	+0 19	+0 12	*1.00	*1.00	2.5	3.0	1.3
2487	Penniman Spit.....	37 17	76 35	+0 41	+0 44	*1.00	*1.00	2.5	3.0	1.3
2489	Cheatham Annex.....	37 18	76 35	+0 43	+0 35	*1.00	*1.00	2.5	3.0	1.3
2491	Queen Creek (2 miles upstream).....	37 18	76 39	+1 00	+0 59	*0.96	*0.96	2.4	2.9	1.3
2493	Clay Bank.....	37 21	76 37	+0 50	+0 49	*1.12	*1.12	2.8	3.4	1.1
2495	Allmondsville.....	37 23	76 39	+0 59	+1 02	*1.14	*1.16	2.8	3.3	1.5
2497	Roane Point.....	37 27	76 42	+1 42	+1 45	*1.12	*1.17	2.8	3.4	1.5
2499	West Point.....	37 32	76 48	+2 07	+2 33	*1.11	*1.17	2.6	3.4	1.5
2501	Mattaponi River									
2503	Wakema.....	37 39	76 54	+3 29	+3 52	*1.38	*1.33	3.4	3.9	1.9
	Walkerton.....	37 43	77 02	+4 26	+4 54	*1.58	*1.58	3.9	4.5	2.5
2505	Pamunkey River									
2507	Sweet Hall Landing.....	37 34	76 54	+3 48	+4 06	*1.08	*1.08	2.7	3.1	1.4
2509	Lester Manor.....	37 35	76 59	+4 40	+4 55	*1.12	*1.17	2.8	3.2	1.5
	White House.....	37 35	77 01	+5 09	+5 24	*1.23	*1.25	3.0	3.4	1.7
2511	Northbury.....	37 37	77 07	+5 58	+6 13	*1.35	*1.33	3.3	3.8	1.8
Chesapeake Bay, Western Shore-Con.										
2513	York Point, Poquoson River.....	37 10	76 24	-0 07	+0 01	*0.96	*1.00	2.4	2.9	1.3
2515	Messick Point, Back River.....	37 06	76 19	-0 26	-0 05	*0.93	*0.92	2.3	2.8	1.3
Hampton Roads										
2517	Old Point Comfort.....	37 00	76 19	-0 04	-0 14	*1.00	*1.00	2.5	3.0	1.4
2519	Hampton River.....	37 01	76 20	+0 02	-0 07	*1.04	*1.08	2.6	3.1	1.4
2521	HAMPTON ROADS (Sewell's Pt.).....	36 57	76 20	Daily predictions				2.5	2.9	1.4
2523	Lafayette River.....	36 54	76 18	+0 11	+0 20	*1.04	*1.08	2.6	3.1	1.4
2525	Lafayette River, Granby St. Bridge..	36 53	76 17	+0 26	+0 32	*1.08	*1.08	2.7	3.2	1.5
Elizabeth River										
2527	Craney Island.....	36 54	76 20	+0 13	-0 01	*1.04	*1.08	2.6	3.1	1.4
2529	Port Norfolk, Western Branch.....	36 51	76 20	+0 17	+0 24	*1.04	*1.08	2.6	3.1	1.4
2531	Norfolk.....	36 51	76 18	+0 18	+0 15	*1.12	*1.17	2.8	3.4	1.5
2533	Portsmouth, Southern Branch.....	36 49	76 18	+0 07	+0 09	*1.14	*1.17	2.8	3.3	1.5
Nansemond River										
2535	Pig Point.....	36 55	76 26	+0 37	+0 35	*1.12	*1.17	2.8	3.4	1.5
2537	Town Point.....	36 53	76 30	+0 33	+0 39	*1.16	*1.17	3.0	3.6	1.6
2539	Hollidays Point (bridge).....	36 50	76 33	+0 51	+0 58	*1.23	*1.25	3.0	3.6	1.6
2541	Suffolk.....	36 44	76 35	+1 37	+1 30	*1.54	*1.50	3.8	4.6	2.1
James River										
2543	Chuckatuck Creek entrance.....	36 55	76 30	+0 45	+0 52	*1.12	*1.12	2.8	3.4	1.5
2545	Newport News.....	36 58	76 26	+0 24	+0 23	*1.04	*1.08	2.6	3.1	1.4
2547	Huntington Park.....	37 01	76 28	+0 40	+0 39	*1.04	*1.08	2.6	3.1	1.5
2549	Menchville.....	37 05	76 32	+0 58	+1 14	*1.04	*1.08	2.6	3.1	1.4
2551	Smithfield, Pagan River.....	36 59	76 38	+1 29	+1 23	*1.12	*1.17	2.8	3.4	1.5
2553	Burwell Bay.....	37 03	76 40	+1 20	+1 39	*0.96	*1.00	2.4	2.9	1.3
2555	Mulberry Point.....	37 08	76 38	+2 00	+2 21	*0.96	*1.00	2.4	2.9	1.3
2557	Hog Point.....	37 12	76 41	+2 15	+2 33	*0.85	*0.83	2.1	2.5	1.1
2559	Scotland.....	37 11	76 47	+2 51	+3 20	*0.77	*0.75	1.9	2.1	1.0
2561	Jamestown Island.....	37 12	76 47	+2 58	+3 31	*0.81	*0.81	2.0	2.4	1.1
2563	Dillard Wharf.....	37 12	76 52	+3 33	+4 10	*0.77	*0.75	1.9	2.3	1.0
Chickahominy River										
2565	Ferry Point (bridge).....	37 16	76 53	+3 56	+4 21	*0.77	*0.75	1.9	2.3	1.0
2567	Wright Island Landing.....	37 21	76 52	+4 39	+4 58	*0.89	*0.92	2.2	2.6	1.1
2569	Mount Airy.....	37 21	76 55	+5 05	+5 33	*0.88	*0.92	2.2	2.6	1.2
2571	Lanexa.....	37 24	76 54	+5 35	+6 03	*1.04	*1.08	2.6	3.1	1.4

TABLE 1.2 —TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
		N	W	h. m.	h. m.	ft	ft	ft	ft	ft
VIRGINIA, James River-Cont. Time meridian, 75°W		on HAMPTON ROADS, p.40								
2573	Claremont.....	37 14	76 57	+3 56	+4 30	*0.73	*0.75	1.8	2.0	1.0
2575	Sturgeon Point.....	37 18	77 00	+4 32	+5 04	*0.85	*0.83	2.1	2.5	1.1
2577	Windmill Point.....	37 18	77 06	+5 26	+5 51	*0.92	*0.92	2.3	2.7	1.2
2579	Willcox Wharf, Charles City.....	37 19	77 06	+5 25	+5 45	*0.88	*0.92	2.2	2.4	1.1
2581	Westover.....	37 19	77 09	+5 47	+6 12	*0.96	*1.00	2.4	2.8	1.3
2583	Jordan Point.....	37 19	77 13	+6 11	+6 34	*1.00	*1.00	2.5	2.9	1.4
		on WASHINGTON, p.36								
2585	City Point (Hopewell).....	37 19	77 16	-4 40	-5 06	*0.96	*0.94	2.6	3.0	1.5
2587	Petersburg, Appomattox River.....	37 14	77 24	-4 10	-3 54	*1.06	*1.06	2.9	3.3	1.6
2589	Bermuda Hundred.....	37 20	77 16	-4 35	-4 59	*0.96	*0.94	2.6	3.0	1.5
2591	Haxall.....	37 22	77 15	-4 28	-4 46	*1.00	*0.94	2.7	3.1	1.6
2593	Curles, 1 mile north of.....	37 24	77 18	-4 10	-4 20	*1.03	*1.00	2.8	3.2	1.6
2595	Chester.....	37 23	77 23	-3 57	-3 53	*1.03	*0.82	2.9	3.2	1.6
2597	Meadowville.....	37 23	77 19	-4 19	-4 27	*1.06	*1.06	2.9	3.3	1.7
2599	Kingsland Reach.....	37 24	77 23	-4 17	-4 22	*1.10	*1.06	3.0	3.5	1.7
2601	Falling Creek entrance.....	37 26	77 26	-4 06	-4 02	*1.17	*1.18	3.2	3.7	1.8
2603	Richmond Deepwater Terminal.....	37 27	77 25	-4 03	-3 55	*1.21	*1.18	3.3	3.8	1.8
2605	Lower Rocketts.....	37 30	77 25	-3 37	-3 26	*1.17	*1.18	3.2	3.6	1.8
2607	Richmond (river locks).....	37 32	77 25	-3 34	-3 20	*1.17	*1.18	3.2	3.6	1.8
Chesapeake Bay, Southern Shore		on HAMPTON ROADS, p.40								
2609	Little Creek (RR. Terminal).....	36 55	76 11	-0 48	-0 50	*1.04	*1.04	2.6	3.1	1.4
2611	Lynnhaven Inlet Highway bridge, east of.....	36 54	76 05	-0 09	+0 05	*0.81	*0.83	2.0	2.4	1.1
2613	Lynnhaven Bay Bayville.....	36 54	76 06	+0 50	+1 43	*0.69	*0.67	1.7	2.0	1.0
2615	Buchanan Creek entrance.....	36 52	76 07	+1 00	+1 51	*0.77	*0.75	1.9	2.3	1.0
2617	Long Creek.....	36 54	76 04	+0 48	+1 19	*0.32	*0.32	0.8	1.0	0.4
2619	Brown Cove.....	36 52	76 04	+0 46	+1 43	*0.69	*0.67	1.7	2.0	0.9
2621	Cape Henry.....	36 56	76 00	-0 48	-1 10	*1.11	*1.17	2.8	3.4	1.5
VIRGINIA, Outer Coast										
2623	Virginia Beach.....	36 51	75 58	-1 26	-1 30	*1.38	*1.33	3.4	4.1	1.9
2625	False Cape.....	36 36	75 53	-1 41	-1 40	*1.46	*1.42	3.6	4.3	2.0

TABLE 1.3 —HEIGHT OF TIDE AT ANY TIME

EXPLANATION OF TABLE

Although the footnote of table 1.3 may be sufficient explanation, two examples are given here to illustrate its use.

Example 1.—Find the height of the tide at 0755 at New York (The Battery), N.Y., on a day when the predicted tides from table 1.1 are given as:

Low Water		High Water	
Time h.m.	Height ft	Time h.m.	Height ft
0522	0.1	1114	4.2
1741	0.6	2310	4.1

An inspection of the above example shows that the desired time falls between the two morning tides

The duration of rise is $11^h 14^m - 5^h 22^m = 5^h 52^m$.

The time after low water for which the height is required is $7^h 55^m - 5^h 22^m = 2^h 33^m$.

The range of tide is $4.2 - 0.1 = 4.1$ feet.

The duration of rise or fall in table 1.3 is given in heavy-faced type for each 20 minutes from $4^h 00^m$ to $10^h 40^m$. The nearest tabular value to $5^h 52^m$, the above duration of rise, is $6^h 00^m$; and on the horizontal line of $6^h 00^m$ the nearest tabular time to $2^h 33^m$ after low water for which the height is required is $2^h 36^m$. Following down the column in which this $2^h 36^m$ is found to its intersection with the line of the range 4.0 feet (the nearest tabular value to the above range of 4.1 feet), the correction is found to be 1.6 feet, which being reckoned from low water, must be added, making $0.1 + 1.6 = 1.7$ feet or 50 centimeters which is the required height above mean lower low water, the datum for New York.

Example 2.—Find the height of the tide at 0300 at Somewhere, U.S.A. on a day when the predicted tides are given as:

High Water		Low Water	
Time h.m.	Height ft	Time h.m.	Height ft
0012	11.3	0638	-2.0
1251	11.0	1853	-1.8

The duration of fall is $6^h 38^m - 00^h 12^m = 6^h 26^m$.

The time after high water for which the height is required is $3^h 00^m - 00^h 12^m = 2^h 48^m$.

The range of tide is $11.3 - (-2.0) = 13.3$ feet.

Entering table 1.3 at the duration of fall of $6^h 20^m$, which is the nearest value to $6^h 26^m$, the nearest value on the horizontal line to $2^h 48^m$ is $2^h 45^m$ after high water. Follow down this column to its intersection with a range of 13.5 feet which is the nearest tabular value to 13.3 feet, one obtains 5.3 which, being calculated from high water, must be subtracted from it. The approximate height at $03^h 00^m$ is, therefore, $11.3 - 5.3 = 6.0$ feet or 180 centimeters.

When the duration of rise or fall is greater than $10^h 40^m$, enter the table with one-half the given duration and with one-half the time from the nearest high or low water; but if the duration of rise or

TABLE 1.3 —HEIGHT OF TIDE AT ANY TIME

fall is less than 4 hours, enter the table with double the given duration and with double the time from the nearest high or low water.

Similarly, when the range of tide is greater than 20 feet, enter the table with one-half the given range. The tabular correction should then be doubled before applying it to the given high or low water height. If the range of tide is greater than 40 feet, take one-third of the range and multiply the tabular correction by 3.

If the height at any time is desired for a place listed in table 1.2 predictions of the high and low waters for the day in question should be obtained by the use of the difference given for the place in that table. Having obtained these predictions, the height for any intermediate time is obtained in the same manner as illustrated in the foregoing example.

GRAPHIC METHOD

If the height of the tide is required for a number of times on a certain day the full tide curve for the day may be obtained by the *one-quarter, one-tenth rule*. The procedure is as follows:

1. On cross-section paper plot the high and low water points in the order of their occurrence for the day, measuring time horizontally and height vertically. These are the basic points for the curve.
2. Draw light straight lines connecting the points representing successive high and low waters.
3. Divide each of these straight lines into four equal parts. The halfway point of each line gives another point for the curve.
4. At the quarter point adjacent to high water draw a vertical line above the point and at the quarter point adjacent to low water draw a vertical line below the point, making the length of these lines equal to one-tenth of the range between the high and low waters used. The points marking the ends of these vertical lines give two additional intermediate points for the curve.
5. Draw a smooth curve through the points of high and low waters and the intermediate points, making the curve well rounded near high and low waters. This curve will approximate the actual tide curve and heights for any time of the day may be readily scaled from it.

Caution.—Both methods presented are based on the assumption that the rise and fall conform to simple cosine curves. Therefore the heights obtained will be approximate. The roughness of approximation will vary as the tide curve differs from a cosine curve.

An example of the use of the graphical method is illustrated below. Using the same predicted tides as in example 2, the approximate height at 3^h 00^m could be determined as shown below.

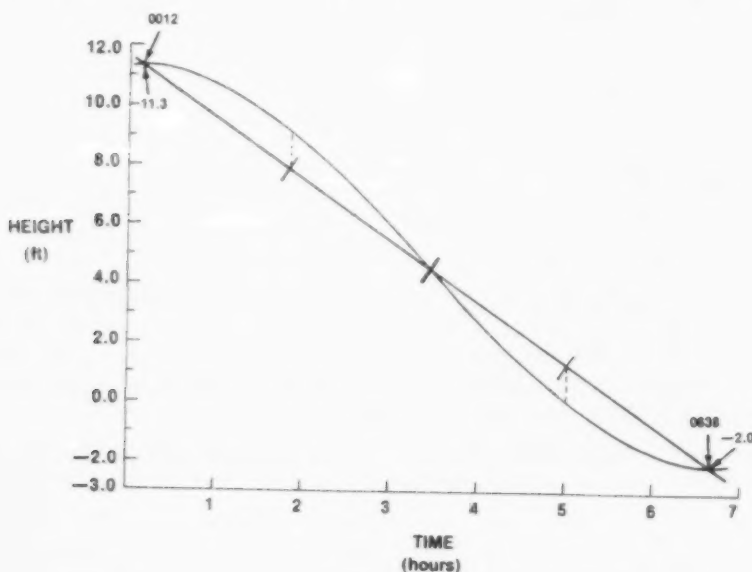


TABLE 1.3—HEIGHT OF TIDE AT ANY TIME

Duration of rise or fall, see footnote	Time from the nearest high water or low water															
	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.
4 00	0 08	0 16	0 24	0 32	0 40	0 48	0 56	1 04	1 12	1 20	1 28	1 36	1 44	1 52	2 00	2 08
4 20	0 09	0 17	0 26	0 35	0 43	0 52	1 01	1 09	1 18	1 27	1 35	1 44	1 53	2 01	2 10	2 19
4 40	0 09	0 19	0 28	0 37	0 47	0 56	1 05	1 15	1 24	1 33	1 43	1 52	2 01	2 11	2 20	2 29
5 00	0 10	0 20	0 30	0 40	0 50	1 00	1 10	1 20	1 30	1 40	1 50	2 00	2 10	2 20	2 30	2 40
5 20	0 11	0 21	0 32	0 43	0 53	1 04	1 15	1 25	1 36	1 47	1 57	2 08	2 19	2 29	2 40	2 50
5 40	0 11	0 23	0 34	0 45	0 57	1 08	1 19	1 31	1 42	1 53	2 05	2 16	2 27	2 39	2 50	3 00
6 00	0 12	0 24	0 36	0 48	1 00	1 12	1 24	1 36	1 48	2 00	2 12	2 24	2 36	2 48	3 00	3 10
6 20	0 13	0 25	0 38	0 51	1 03	1 16	1 29	1 41	1 54	2 07	2 19	2 32	2 45	2 57	3 10	3 20
6 40	0 13	0 27	0 40	0 53	1 07	1 20	1 33	1 47	2 00	2 13	2 27	2 40	2 53	3 07	3 20	3 30
7 00	0 14	0 28	0 42	0 56	1 10	1 24	1 38	1 52	2 06	2 20	2 34	2 48	3 02	3 16	3 30	3 40
7 20	0 15	0 29	0 44	0 59	1 13	1 28	1 43	1 57	2 12	2 27	2 41	2 56	3 11	3 25	3 40	3 50
7 40	0 15	0 31	0 46	1 01	1 17	1 32	1 47	2 03	2 18	2 33	2 49	3 04	3 19	3 35	3 50	4 00
8 00	0 16	0 32	0 48	1 04	1 20	1 36	1 52	2 08	2 24	2 40	2 56	3 12	3 28	3 44	4 00	4 10
8 20	0 17	0 33	0 50	1 07	1 23	1 40	1 57	2 13	2 30	2 47	3 03	3 20	3 37	3 53	4 10	4 20
8 40	0 17	0 35	0 52	1 09	1 27	1 44	2 01	2 19	2 36	2 53	3 11	3 28	3 45	4 03	4 20	4 30
9 00	0 18	0 36	0 54	1 12	1 30	1 48	2 06	2 24	2 42	3 00	3 18	3 36	3 54	4 12	4 30	4 40
9 20	0 19	0 37	0 56	1 15	1 33	1 52	2 11	2 29	2 48	3 07	3 25	3 44	4 03	4 21	4 40	4 50
9 40	0 19	0 39	0 58	1 17	1 37	1 56	2 15	2 35	2 54	3 13	3 33	3 52	4 11	4 31	4 50	5 00
10 00	0 20	0 40	1 00	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00	5 10
10 20	0 21	0 41	1 02	1 23	1 43	2 04	2 25	2 45	3 06	3 27	3 47	4 08	4 29	4 49	5 10	5 20
10 40	0 21	0 43	1 04	1 25	1 47	2 08	2 29	2 51	3 12	3 33	3 55	4 16	4 37	4 59	5 20	5 30
Range of tide, see footnote	Correction to height															
	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.
0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5
1.5	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9
2.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2
2.5	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.5
3.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8	2.0
3.5	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8	2.0
4.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.1	1.3	1.6	1.8	2.0	2.2
4.5	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2	2.5
5.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	2.0	2.2	2.5	2.8
5.5	0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8	3.0
6.0	0.0	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.2
6.5	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2	3.5
7.0	0.0	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.4	2.8	3.1	3.5	3.8
7.5	0.0	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	1.9	2.2	2.6	3.0	3.4	3.8	4.2
8.0	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.4
8.5	0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.4	3.8	4.2	4.5
9.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.7	3.1	3.6	4.0	4.5	4.8
9.5	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.8	3.3	3.8	4.3	4.8	5.0
10.0	0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.1	2.5	3.0	3.5	4.0	4.5	5.0	5.2
10.5	0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.6	3.1	3.6	4.2	4.7	5.2	5.5
11.0	0.0	0.1	0.3	0.5	0.7	1.1	1.4	1.8	2.3	2.8	3.3	3.8	4.4	4.9	5.5	5.8
11.5	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.9	2.4	2.9	3.4	4.0	4.6	5.1	5.8	6.0
12.0	0.0	0.1	0.3	0.5	0.8	1.1	1.5	2.0	2.5	3.0	3.6	4.1	4.8	5.4	6.0	6.2
12.5	0.0	0.1	0.3	0.5	0.8	1.2	1.6	2.1	2.6	3.1	3.7	4.3	5.0	5.6	6.2	6.5
13.0	0.0	0.1	0.3	0.6	0.9	1.2	1.7	2.2	2.7	3.2	3.9	4.5	5.1	5.8	6.5	6.8
13.5	0.0	0.1	0.3	0.6	0.9	1.3	1.7	2.2	2.8	3.4	4.0	4.7	5.3	6.0	6.8	7.0
14.0	0.0	0.2	0.3	0.6	0.9	1.3	1.8	2.3	2.9	3.5	4.2	4.8	5.5	6.3	7.0	7.2
14.5	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.4	3.0	3.6	4.3	5.0	5.7	6.5	7.2	7.5
15.0	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.5	3.1	3.8	4.4	5.2	5.9	6.7	7.5	7.8
15.5	0.0	0.2	0.4	0.7	1.0	1.5	2.0	2.6	3.2	3.9	4.6	5.4	6.1	6.9	7.8	8.0
16.0	0.0	0.2	0.4	0.7	1.1	1.5	2.1	2.6	3.3	4.0	4.7	5.5	6.3	7.2	8.0	8.2
16.5	0.0	0.2	0.4	0.7	1.1	1.6	2.1	2.7	3.4	4.1	4.9	5.7	6.5	7.4	8.2	8.5
17.0	0.0	0.2	0.4	0.7	1.1	1.6	2.2	2.8	3.5	4.2	5.0	5.9	6.7	7.6	8.5	8.8
17.5	0.0	0.2	0.4	0.8	1.2	1.7	2.2	2.9	3.6	4.4	5.2	6.0	6.9	7.8	8.8	9.0
18.0	0.0	0.2	0.4	0.8	1.2	1.7	2.3	3.0	3.7	4.5	5.3	6.2	7.1	8.1	9.0	9.2
18.5	0.1	0.2	0.5	0.8	1.2	1.8	2.4	3.1	3.8	4.6	5.5	6.4	7.3	8.3	9.2	9.5
19.0	0.1	0.2	0.5	0.8	1.3	1.8	2.4	3.1	3.9	4.8	5.6	6.6	7.5	8.5	9.5	9.8
19.5	0.1	0.2	0.5	0.8	1.3	1.9	2.5	3.2	4.0	4.9	5.8	6.7	7.7	8.7	9.8	10.0
20.0	0.1	0.2	0.5	0.9	1.3	1.9	2.6	3.3	4.1	5.0	5.9	6.9	7.9	9.0	10.0	10.2

Obtain from the predictions the high water and low water, one of which is before and the other after the time for which the height is required. The difference between the times of occurrence of these tides is the duration of rise or fall, and the difference between their heights is the range of tide for the above table. Find the difference between the nearest high or low water and the time for which the height is required.

Enter the table with the duration of rise or fall, printed in heavy-faced type, which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below, on the line with the range of tide.

When the nearest tide is high water, subtract the correction.

When the nearest tide is low water, add the correction.

INDEX TO STATIONS
(Numbers refer to table 2)

[Stations marked with an asterisk (*) are reference stations for which daily predictions are given in table 1. Page numbers of reference stations are given in parentheses.]

A	No.		No.
Absecon Channel, N. J.....	1765	Breakwater Harbor, Del * (20).....	1879
Absecon Creek, N. J.....	1761	Breton Bay, Md.....	2327
Albany, N. Y. * (4).....	1605	Brewer Point, Severn River, Md.....	2257
Alexandria, Va.....	2385	Bridesburg, Pa.....	1971
Allmondsville, Va.....	2495	Bridgeboro, Rancocas Creek, N. J.....	1975
Anacostia River.....	2393, 2395	Bridgeton, N. J.....	1863
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Aquia Creek, Va.....	2359	Brooklyn Bridge, N. Y.....	1343
Arthur Kill.....	1639-1653	Broomes Island, Md.....	2291
Asbury Park, N. J.....	1695	Brown Cove, Va.....	2619
Assacorkin Island, Md.....	2033	Browns Bay, Va.....	2467
Assateague Beach, Toms Cove, Va.....	2011	Buchanan Creek entrance, Va.....	2615
Atlantic City, N. J.....	1769	Burlington, N. J.....	1981
Atlantic Highlands, N. J.....	1677	Burwell Bay, Va.....	2553
Avalon, Md.....	2167	Bushwood Wharf, Md.....	2339
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B		Cambridge, Md.....	2147
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Baltimore, Md. * (32).....	2243	Cape Charles Harbor, Va.....	2067
Barnegat Bay, N. J.....	1711-1723	Cape Henlopen, Del.....	1877
Barnegat Inlet, N. J.....	1721	Cape Henry, Va.....	2621
Barren Island, Jamaica Bay, N. Y.....	1513	Cape May, N. J.....	1825
Barren Island, Md.....	2133	Cape May (ferry terminal), N. J.....	1833
Battery Point, Md.....	2231	Cape May Harbor, N. J.....	1823
Bay Ridge, Md.....	2261	Cape May Point, N. J.....	1831
Bay Ridge, N. Y.....	1537	Carteret, N. J.....	1645
Bay Shore Channel, N. J.....	1835	Castleton-on-Hudson, N. Y.....	1603
Bay Side, N. J.....	1865	Catskill, N. Y.....	1595
Bayonne, N. J.....	1541	Cedar Point, Chesapeake Bay, Md.....	2301
Bayport, Va.....	2429	Cedar Point, Severn River, Md.....	2255
Bayville, Va.....	2613	Cedar Swamp Creek, N. J.....	1789
Beach Channel (bridge), N. Y.....	1515	Centreville Landing, Md.....	2191
Beach Haven, N. J.....	1735	Chain Bridge, D. C.....	2401
Beach Haven Coast Guard Station, N. J..	1737	one mile below.....	2399
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Belleville, N. J.....	1627	Cheesequake Creek, N. J.....	1669
Belleville, Va.....	2465	Chelsea, N. J.....	1771
Bellevue, D. C.....	2387	Chelsea, N. Y.....	1643
Ben Davis Point, N. J.....	1855	Cherry Island, Md.....	2139
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Bermuda Hundred, Va.....	2589	Chesapeake Beach, Md.....	2279
Betterton, Md.....	2209	Chesapeake City, Md.....	1911
Biddle Point, Del.....	1907	Chesconessex Creek, Va.....	2077
Bidwell Creek Entrance, N. J.....	1839	Chester, Pa.....	1937
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Bogues Bay, Va.....	2017, 2019	Chincoteague Bay, Md. and Va.....	2011-2035
Bordentown, N. J.....	1987	Chincoteague Channel, Va.....	2015
Bowlers Rock, Va.....	2431	Chincoteague Island, Va.....	2021-2027
Bowley Bar, Md.....	2233	Chincoteague Point, Va.....	2013
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PART TWO
TIDAL CURRENT TABLES

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TABLE 2.1 — DAILY CURRENT PREDICTIONS

EXPLANATION OF TABLE

This table gives the predicted times of slack water and the predicted times and speeds of maximum flood and ebb current for each day of the year at seven reference stations in this region. The times are given in hours and minutes and the speed in knots.

Time.—The kind of time used for the predictions at each reference is standard time for the time meridian indicated on the bottom of each page.

Slack water and maximum current.—The columns headed "Slack water" contain the predicted times at which there is no current; or, in other words, the times at which the current has stopped setting in a given direction and is about to begin to set in the opposite direction. Offshore, where the current is rotary, slack water denotes the time of minimum current. Beginning with the slack water before flood the current increases in speed until the strength or maximum speed of the flood current is reached; it then decreases until the following slack water or slack before ebb. The ebb current now begins, increases to a maximum speed, and then decreases to the next slack. The predicted times and speeds of maximum current are given in the columns headed "Maximum Current". Flood speeds are marked with an "F" the ebb speeds with an "E". An entry in the "Slack Water" column will be slack, flood begins if the maximum current which follows it is marked "F". Otherwise the entry will be slack, ebb begins.

Direction of set.—As the terms flood and ebb do not in all cases clearly indicate the direction of the current, the approximate direction toward which the currents flow are given at the top of each page to distinguish the two streams.

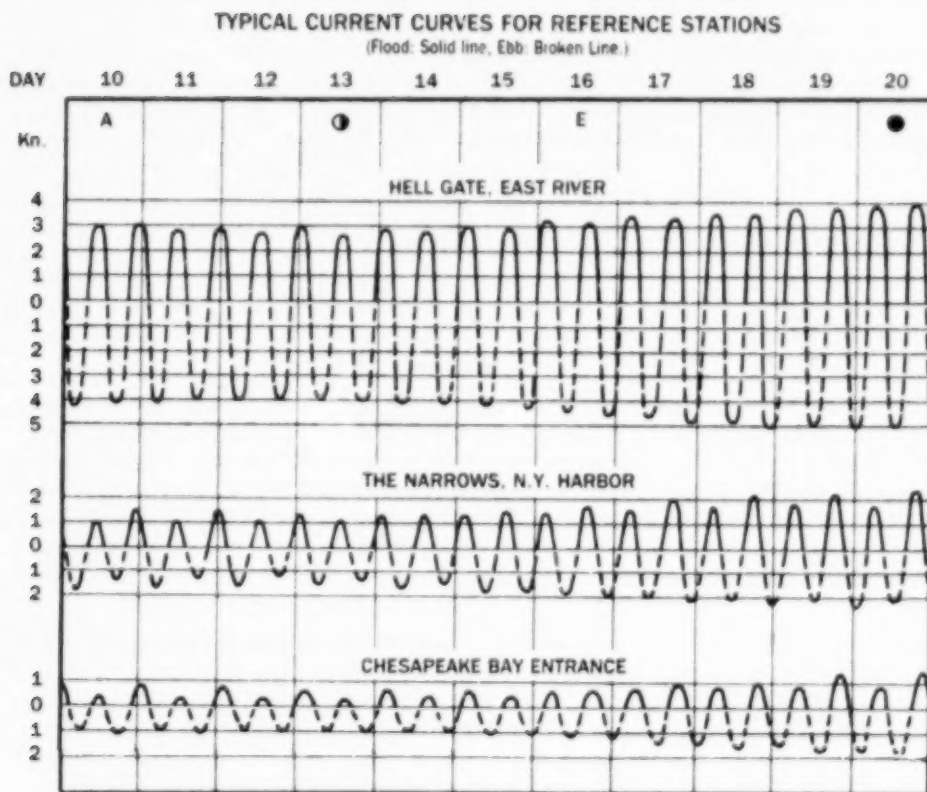
Number of slacks and strengths.—There are usually four slacks and four maximums each day. When a vacancy occurs in any day, the slack or maximum that seems to be missing will be found to occur soon after midnight as the first slack or maximum of the following day.

Current and tide.—It is important to notice that the predicted slacks and strengths given in this table refer to the horizontal motion of the water and not the vertical rise and fall of the tide. The relation of current to tide is not constant, but varies from place to place, and the time of slack water does not generally coincide with the time of high or low water, nor does the time of maximum speed of the current usually coincide with the time of most rapid change in the vertical height of the tide. At stations located on a tidal river or bay the time of slack water may differ from 1 to 3 hours from the time of high or low water. The times of high and low waters are given in the tide tables in Part One of this publication.

Variation from predictions.—In using this table, it should be remembered that actual times of slack or maximum may differ from the predicted times by as much as half an hour and in rare instances the differences may be as much as an hour, because of wind or river discharge effects. Comparison of predicted with observed times of slack water indicate that more than 90 percent of the slack waters occurred within half an hour of the predicted times. To make sure, therefore, of getting the full advantage of a favorable current or slack water, the navigator should reach the entrance or strait at least half an hour before the predicted time of the desired condition of current. On days when the current is affected by wind or river discharge, the times and speed will differ from those given in the table, but local knowledge will enable one to make proper allowance for these effects.

Table 2.1 —Daily Current Predictions

Typical current curve.—The variation in the tidal current from day to day and from place to place are illustrated below by the current curves for three representative ports in this region. Flood current is represented by the solid line curve above the zero speed (slack water) line and the ebb current by the broken line curve below the slack water line. The curves show clearly that the currents along the Atlantic coast are semi-daily (two floods and two ebbs in a day) in character with their principal variations following changes in the Moon's distance and phase.



*Current weak and variable.

A discussion of these curves is given on the preceding page.

Lunar data: A—moon in apogee
 O—last quarter
 E—moon on equator
 ●—new moon

FEBRUARY

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THROGS NECK, EAST RIVER, NEW YORK, 1990

F-Flood, Dir. 090° True E-Ebb, Dir. 289° True

MARCH

APRIL

Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.			
Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1	0009	0252	1.0E	16	0029	0302	0.7E	1	0155	0415	0.9E	16	0114	0411	0.7E	1	0155	0415	0.9E	16	0114	0411	0.7E
Th	0551	0901	0.8F	F	0548	0903	0.6F	Su	0733	1035	0.7F	M	0631	1003	0.5F	Th	0551	0901	0.8F	M	0631	1003	0.5F
	1237	1518	1.0E		1252	1526	0.7E		1427	1641	0.8E		1342	1635	0.7E		1237	1518	1.0E		1342	1635	0.7E
	1818	2126	0.8F		1804	2124	0.5F		2003	2307	0.7F		1856	2229	0.5F		1818	2126	0.8F		1856	2229	0.5F
2	0107	0344	1.0E	17	0116	0351	0.7E	2	0258	0507	0.8E	17	0207	0500	0.7E	2	0107	0344	1.0E	17	0207	0500	0.7E
F	0646	0953	0.8F	Sa	0623	0945	0.5F	M	0836	1138	0.6F	Tu	0721	1058	0.5F	F	0646	0953	0.8F	Tu	0721	1058	0.5F
	1338	1611	0.9E		1340	1615	0.7E		1528	1734	0.8E		1432	1725	0.7E		1338	1611	0.9E		1432	1725	0.7E
	1914	2222	0.7F		1843	2210	0.5F		2110				1948	2326	0.5F		1914	2222	0.7F		1948	2326	0.5F
3	0209	0437	0.9E	18	0204	0439	0.7E	3	0359	0602	0.7E	18	0300	0551	0.7E	3	0209	0437	0.9E	18	0300	0551	0.7E
Sa	0743	1052	0.7F	Su	0707	1037	0.5F	Tu	0945	1237	0.6F	W	0816	1153	0.6F	Sa	0743	1052	0.7F	W	0816	1153	0.6F
	1440	1703	0.9E		1427	1703	0.7E		1630	1830	0.7E		1528	1818	0.7E		1440	1703	0.9E		1528	1818	0.7E
	2014	2323	0.7F		1930	2304	0.5F		2217				2047				2014	2323	0.7F		2047		
4	0312	0530	0.8E	19	0251	0528	0.7E	4	0500	0707	0.6F	19	0358	0645	0.7E	4	0312	0530	0.8E	19	0358	0645	0.7E
Su	0848	1152	0.7F	M	0754	1131	0.5F	W	0946	1249	0.6F	Th	0920	1243	0.6F	Su	0848	1152	0.7F	Th	0920	1243	0.6F
	1544	1757	0.8E		1516	1754	0.7E		1729	1925	0.7E		1629	1912	0.7E		1544	1757	0.8E		1629	1912	0.7E
	2124				2022	2357	0.5F		2314				2152				2124				2152		
5	0416	0620	0.6F	20	0344	0621	0.7E	5	0558	0752	0.6F	20	0500	0739	0.6F	5	0416	0620	0.6F	20	0500	0739	0.6F
M	0959	1248	0.6F	Tu	0852	1222	0.5F	Th	1140	1508	0.6F	F	1022	1336	0.6F	M	0959	1248	0.6F	F	1022	1336	0.6F
	1648	1854	0.7E		1614	1848	0.7E		1825	2018	0.7E		1729	2006	0.8E		1648	1854	0.7E		1729	2006	0.8E
	2232				2123								2252				2232				2252		
6	0520	0722	0.6F	21	0445	0715	0.7E	6	0007	0337	0.5F	21	0557	0831	0.6F	6	0520	0722	0.6F	21	0557	0831	0.6F
Tu	1102	1357	0.6F	W	0955	1310	0.5F	F	0650	0842	0.7E	Sa	1121	1437	0.7F	Tu	1102	1357	0.6F	Sa	1121	1437	0.7F
	1750	1950	0.7E		1715	1942	0.7E		1235	1602	0.6F		1823	2057	0.9E		1750	1950	0.7E		1823	2057	0.9E
	2331				2225				1915	2106	0.7E		2351				2331				2351		
7	0619	0817	0.7E	22	0542	0808	0.7E	7	0104	0424	0.6F	22	0650	0923	0.9E	7	0619	0817	0.7E	22	0650	0923	0.9E
W	1200	1521	0.6F	Th	1054	1406	0.6F	Sa	0738	0931	0.7E	Su	1221	1537	0.7F	W	1200	1521	0.6F	Su	1221	1537	0.7F
	1847	2043	0.7E		1808	2034	0.8E		1330	1644	0.6F		1916	2149	1.0E		1847	2043	0.7E		1916	2149	1.0E
8	0030	0352	0.6F	23	0632	0859	0.8E	8	0154	0501	0.6F	23	0052	0404	0.8F	8	0030	0352	0.6F	23	0052	0404	0.8F
Th	0712	0908	0.7E	F	1151	1509	0.6F	Su	0823	1019	0.7E	M	0740	1015	1.0E	Th	0712	0908	0.7E	M	0740	1015	1.0E
	1301	1619	0.6F		1858	2124	0.8E		1414	1717	0.6F		1321	1629	0.8F		1301	1619	0.6F		1321	1629	0.8F
	1938	2133	0.7E						2045	2243	0.7E		2007	2241	1.0E		1938	2133	0.7E		2007	2241	1.0E
9	0131	0443	0.6F	24	0020	0337	0.7F	9	0233	0532	0.6F	24	0149	0455	0.8F	9	0131	0443	0.6F	24	0149	0455	0.8F
F	0802	0959	0.7E	Sa	0721	0950	0.9E	M	0907	1107	0.7E	Tu	0832	1107	1.0E	F	0802	0959	0.7E	Tu	0832	1107	1.0E
	1357	1706	0.6F		1251	1603	0.7F		1451	1747	0.6F		1416	1721	0.9F		1357	1706	0.6F		1416	1721	0.9F
	2026	2224	0.7E		1945	2216	0.9E		2128	2330	0.7E		2058	2333	1.1E		2026	2224	0.7E		2058	2333	1.1E
10	0219	0528	0.6F	25	0120	0428	0.7F	10	0307	0602	0.6F	25	0242	0548	0.9F	10	0219	0528	0.6F	25	0242	0548	0.9F
Sa	0849	1049	0.7E	Su	0808	1042	0.9E	Tu	0948	1153	0.7E	W	0925	1159	1.1E	Sa	0849	1049	0.7E	W	0925	1159	1.1E
	1441	1748	0.6F		1347	1653	0.8F		1522	1819	0.6F		1508	1816	0.9F		1441	1748	0.6F		1508	1816	0.9F
	2112	2313	0.7E		2031	2307	1.0E		2208				2151				2112	2313	0.7E		2151		
11	0300	0608	0.6F	26	0212	0518	0.8F	11	0337	0637	0.6F	26	0334	0643	0.9F	11	0300	0608	0.6F	26	0334	0643	0.9F
Su	0935	1136	0.8E	M	0856	1133	1.0E	W	1027	1237	0.8E	Th	1018	1249	1.1E	Su	0935	1136	0.8E	Th	1018	1249	1.1E
	1519	1825	0.6F		1436	1744	0.8F		1551	1855	0.6F		1600	1910	0.9F		1519	1825	0.6F		1600	1910	0.9F
	2156				2120	2358	1.0E		2245				2245				2156				2245		
12	0337	0642	0.8E	27	0301	0610	0.8F	12	0405	0715	0.6F	27	0428	0737	0.9F	12	0337	0642	0.8E	27	0428	0737	0.9F
M	1017	1221	0.8E	Tu	0946	1223	1.1E	Th	1102	1321	0.8E	F	1112	1340	1.0E	M	1017	1221	0.8E	F	1112	1340	1.0E
	1554	1858	0.6F		1525	1837	0.9F		1620	1934	0.6F		1657	2003	0.8F		1554	1858	0.6F		1657	2003	0.8F
	2237				2210				2319				2339				2237				2339		
13	0411	0714	0.8E	28	0350	0703	0.9F	13	0435	0754	0.6F	28	0526	0829	0.8F	13	0411	0714	0.8E	28	0526	0829	0.8F
Tu	1056	1305	0.8E	W	1036	1312	1.1E	F	1135	1408	0.7E	Sa	1208	1432	1.0E	Tu	1056	1305	0.8E	Sa	1208	1432	1.0E
	1627	1931	0.6F		1616	1929	0.9F		1652	2014	0.6F		1754	2054	0.8F		1627	1931	0.6F		1754	2054	0.8F
	2315				2301				2349								2315						
14	0444	0748	0.8E	29	0443	0754	0.9F	14	0510	0834	0.6F	29	0623	0920	0.9E	14	0444	0748	0.8E	29	0623	0920	0.9E
W	1133	1350	0.8E	Th	1127	1403	1.0E	Sa	1204	1457	0.7E	Su	1308	1526	0.9E	W	1133	1350	0.8E	Su	1308	1526	0.9E
	1700	2006	0.6F		1710	2019	0.9F		1729	2054	0.6F		1852	2148	0.7F		1700	2006	0.6F		1852	2148	0.7F
	2351				2354												2351						
15	0516	0825	0.8E	30	0538	0844	0.8F	15	0020	0321	0.7E	30	0138	0352	0.9E	15	0516	0825	0.8E	30	0138	0352	0.9E
Th	1210	1438	0.7E	F	1223	1455	1.0E	Su	0549	0916	0.5F	M	0720	1018	0.7F	Th	1210	1438	0.7E	M	0720	1018	0.7F
	1731	2043	0.6F		1806	2110	0.8F		1243	1546	0.7E		1408	1618	0.8E		1731	2043	0.6F		1408	1618	0.8E
									1809	2138	0.5F		1949	2251	0.7F						1949	2251	0.7F
				31	0053	0322	1.0E																
				Sa	0635	0936	0.8F																
					1324	1548	0.9E																
					1904	2204	0.7F																

Time meridian 75° W. 0000 is midnight, 1200 is noon.

F-Flood, Dir. 090° True E-Ebb, Dir. 289° True

MAY								JUNE												
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current		
	Time	Vel.		Time	Vel.			Time	Vel.		Time	Vel.			Time	Vel.				
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots	
1 Tu	0238	0444	0.8E	16 W	0127	0433	0.7E	1 F	0018	0018	0.5F	16 Sa	0251	0548	0.8E					
	0818	1123	0.6F		0654	1026	0.6F		0403	0559	0.7E		0823	1152	0.7F					
	1508	1710	0.8E		1355	1658	0.7E		0950	1240	0.5F		1521	1815	0.8E					
	2050	2353	0.6F		1921	2255	0.6F		1630	1825	0.6E		2054							
									2217											
2 W	0337	0536	0.7E	17 Th	0223	0523	0.8E	2 Sa	0102	0102	0.5F	17 Su	0019	0019	0.7F					
	0923	1222	0.6F		0749	1123	0.6F		0458	0652	0.6E		0352	0642	0.9E					
	1606	1803	0.7E		1451	1749	0.8E		1041	1324	0.5F		0927	1245	0.7F					
	2155				2018	2351	0.6F		1724	1918	0.6E		1625	1910	0.9E					
									2304				2159							
3 Th		0050	0.6F	18 F	0321	0616	0.8E	3 Su	0156	0156	0.5F	18 M	0112	0112	0.7F					
	0435	0630	0.7E		0849	1217	0.6F		0743	0743	0.6E		0738	0738	0.9E					
	1024	1322	0.5F		1551	1843	0.8E		1434	1434	0.5F		1341	1341	0.7F					
	1703	1857	0.6E		2121				1815	2007	0.6E		1729	2005	0.9E					
	2249								2347				2302							
4 F		0201	0.5F	19 Sa		0043	0.7F	4 M	0301	0301	0.5F	19 Tu	0212	0212	0.7F					
	0530	0724	0.6E		0422	0710	0.8E		0831	0831	0.6E		0600	0831	0.9E					
	1114	1438	0.5F		0953	1309	0.7F		1523	1523	0.5F		1133	1445	0.7F					
	1757	1949	0.6E		1653	1937	0.9E		2054	2054	0.6E		1830	2058	0.9E					
	2338				2224															
5 Sa		0306	0.5F	20 Su		0137	0.7F	5 Tu	0342	0342	0.5F	20 W	0005	0317	0.8F					
	0622	0814	0.6E		0524	0804	0.9E		0918	0918	0.6E		0659	0924	0.9E					
	1202	1531	0.5F		1054	1407	0.7F		1300	1558	0.5F		1238	1547	0.8F					
	1847	2038	0.6E		1753	2030	0.9E		1946	2142	0.7E		1928	2151	1.0E					
					2324															
6 Su	0027	0351	0.5F	21 M		0239	0.7F	6 W	0124	0414	0.5F	21 Th	0111	0415	0.8F					
	0710	0901	0.7E		0621	0856	0.9E		0807	1006	0.7E		0757	1019	1.0E					
	1253	1609	0.5F		1154	1510	0.8F		1346	1630	0.5F		1342	1643	0.8F					
	1932	2124	0.7E		1850	2123	1.0E		2029	2231	0.7E		2024	2246	1.0E					
7 M	0119	0424	0.5F	22 Tu	0026	0339	0.8F	7 Th	0205	0448	0.5F	22 F	0211	0511	0.8F					
	0754	0948	0.7E		0718	0949	1.0E		0850	1055	0.7E		0852	1113	1.0E					
	1341	1638	0.5F		1257	1607	0.8F		1422	1706	0.5F		1439	1740	0.8F					
	2016	2212	0.7E		1945	2216	1.0E		2111	2320	0.7E		2120	2339	1.0E					
8 Tu	0201	0451	0.5F	23 W	0128	0434	0.8F	8 F	0238	0526	0.5F	23 Sa	0307	0610	0.8F					
	0837	1036	0.7E		0812	1042	1.0E		0932	1143	0.7E		0948	1205	1.0E					
	1420	1704	0.5F		1357	1700	0.9F		1453	1748	0.5F		1533	1839	0.8F					
	2058	2301	0.7E		2039	2309	1.0E		2152				2215							
9 W	0236	0520	0.5F	24 Th	0225	0528	0.9F	9 Sa	0007	0007	0.7E	24 Su	0030	0030	1.0E					
	0919	1124	0.7E		0908	1136	1.0E		0308	0612	0.5F		0400	0706	0.8F					
	1452	1739	0.5F		1452	1756	0.9F		1011	1230	0.7E		1040	1255	1.0E					
	2139	2347	0.7E		2125				1523	1836	0.5F		1627	1933	0.8F					
									2229				2307							
10 Th	0306	0559	0.5F	25 F		0002	1.0E	10 Su	0052	0052	0.8E	25 M	0120	0120	0.9E					
	0959	1210	0.7E		0319	0625	0.9F		0339	0658	0.6F		0455	0758	0.8F					
	1520	1820	0.5F		1002	1227	1.0E		1046	1315	0.8E		1133	1345	0.9E					
	2218				1546	1854	0.8F		1557	1922	0.6F		1722	2022	0.7F					
					2230				2301				2359							
11 F		0032	0.7E	26 Sa		0052	1.0E	11 M	0138	0138	0.8E	26 Tu	0210	0210	0.9E					
	0333	0642	0.5F		0414	0721	0.8F		0744	0744	0.6F		0548	0845	0.7F					
	1036	1255	0.7E		1057	1318	1.0E		1116	1402	0.8E		1225	1436	0.9E					
	1548	1904	0.5F		1642	1948	0.8F		1637	2006	0.6F		1814	2108	0.7F					
	2252				2325				2331											
12 Sa		0117	0.7E	27 Su		0143	1.0E	12 Tu	0227	0227	0.8E	27 W	0051	0301	0.8E					
	0403	0726	0.5F		0511	0814	0.8F		0827	0827	0.6F		0638	0932	0.7F					
	1108	1340	0.7E		1151	1409	0.9E		1148	1452	0.8E		1318	1526	0.8E					
	1621	1947	0.6F		1740	2039	0.8F		1722	2048	0.6F		1902	2156	0.6F					
	2322																			
13 Su		0204	0.7E	28 M	0020	0235	0.9E	13 W	0317	0317	0.8E	28 Th	0145	0351	0.8E					
	0440	0808	0.6F		0608	0904	0.7F		0545	0911	0.6F		0726	1022	0.6F					
	1136	1429	0.7E		1248	1502	0.9E		1231	1542	0.8E		1411	1615	0.8E					
	1700	2029	0.6F		1836	2130	0.7F		1809	2134	0.6F		1949	2248	0.6F					
	2351																			
14 M		0253	0.7E	29 Tu	0117	0328	0.8E	14 Th	0407	0407	0.8E	29 F	0237	0439	0.7E					
	0521	0850	0.6F		0703	0958	0.7F		1000	1000	0.6F		0812	1112	0.6F					
	1208	1519	0.7E		1346	1554	0.8E		1326	1632	0.8E		1502	1703	0.7E					
	1743	2112	0.6F		1929	2229	0.6F		1859	2227	0.6F		2037	2337	0.5F					
15 Tu	0031	0344	0.7E	30 W	0214	0419	0.8E	15 F	0153	0457	0.8E	30 Sa	0328	0527	0.7E					
	0606	0934	0.6F		0755	1059	0.6F		0725	1055	0.6F		0905	1158	0.5F					
	1258	1608	0.7E		1442	1644	0.8E		1422	1722	0.8E		1554	1752	0.7E					
	1830	2200	0.6F		2022	2328	0.6F		1953	2324	0.7F		2132							
				31 Th	0309	0509	0.7E													
					0851	1154	0.6F													
					1537	1733	0.7E													
					2122															

THROGS NECK, EAST RIVER, NEW YORK, 1990

F-Flood, Dir. 090° True E-Ebb, Dir. 289° True

JULY

AUGUST

AUGUST															
Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.			
Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1 Su	0419	0018	0.5F	16 M	0331	0616	0.9E	1 W	0528	0104	0.5F	16 Th	0531	0130	0.7F
	0958	1237	0.6E		0905	1223	0.7F		1045	0729	0.6E		1108	0745	0.8E
	1646	1844	0.5F		1605	1844	0.9E		1754	1327	0.5F		1802	1404	0.7F
	2222		0.6E		2139				2307	1955	0.6E		2339	2013	0.8E
2 M	0513	0056	0.5F	17 Tu	0438	0050	0.7F	2 Th	0619	0153	0.5F	17 F	0632	0244	0.7F
	1045	0710	0.6E		1013	0712	0.9E		1129	0820	0.6E		1211	0840	0.8E
	1739	1317	0.5F		1711	1319	0.7F		1843	1424	0.5F		1901	1520	0.7E
	2307	1935	0.6E		2246	1940	0.9E		2352	2044	0.6E		2339	2107	0.8E
3 Tu	0604	0141	0.5F	18 W	0544	0149	0.7F	3 F	0707	0256	0.5F	18 Sa	0044	0353	0.7F
	1128	0800	0.6E		1118	0808	0.9E		1218	0909	0.7E		0729	0933	0.8E
	1829	1409	0.5F		1815	1423	0.7F		1929	1524	0.5F		1317	1622	0.7F
	2349	2025	0.6E		2350	2035	0.9E		2012	2134	0.7E		1956	2200	0.8E
4 W	0652	0241	0.5F	19 Th	0646	0257	0.7F	4 Sa	0048	0350	0.5F	19 Su	0147	0450	0.7F
	1211	0849	0.6E		1223	0902	0.9E		0751	0959	0.7E		0821	1027	0.8E
	1915	1511	0.5F		1915	1530	0.7F		1317	1613	0.5F		1414	1717	0.7F
		2113	0.6E			2129	0.9E		2012	2224	0.7E		2047	2253	0.8E
5 Th	0038	0336	0.5F	20 F	0057	0401	0.7F	5 Su	0141	0435	0.6F	20 M	0239	0544	0.7F
	0738	0937	0.7E		0742	0956	0.9E		0834	1049	0.7E		0912	1118	0.8E
	1305	1558	0.5F		1330	1630	0.7F		1402	1657	0.6F		1502	1809	0.7F
	1959	2202	0.7E		2010	2223	0.9E		2055	2314	0.8E		2137	2343	0.8E
6 F	0130	0419	0.5F	21 Sa	0200	0458	0.8F	6 M	0221	0520	0.6F	21 Tu	0325	0633	0.7F
	0821	1027	0.7E		0838	1050	0.9E		0915	1139	0.8E		1000	1207	0.8E
	1352	1639	0.5F		1427	1727	0.8F		1440	1743	0.6F		1546	1855	0.7F
	2043	2252	0.7E		2105	2317	0.9E		2135				2223		
7 Sa	0211	0500	0.5F	22 Su	0254	0557	0.8F	7 Tu	0259	0602	0.8E	22 W	0408	0030	0.8E
	0905	1117	0.7E		0931	1143	0.9E		0954	1226	0.9E		1046	0715	0.7F
	1428	1722	0.5F		1519	1825	0.8F		1518	1832	0.7F		1629	1252	0.8E
	2125	2341	0.7E		2157				2212				2308	1934	0.7F
8 Su	0245	0544	0.6F	23 M	0344	0008	0.9E	8 W	0338	0049	0.9E	23 Th	0451	0115	0.8E
	0945	1204	0.8E		1022	0651	0.7F		1031	0656	0.7F		1129	0753	0.7F
	1502	1808	0.6F		1608	1916	0.9E		1559	1312	0.9E		1712	1338	0.8E
	2203				2247				2250	1920	0.7F		2350	2010	0.6F
9 M	0319	0028	0.8E	24 Tu	0433	0056	0.9E	9 Th	0421	0136	0.9E	24 F	0532	0201	0.8E
	0633	0.6F			0739	0.7F			0743	0.7F			0827	0.6F	
	1021	1251	0.8E		1110	1319	0.9E		1110	1400	0.9E		1212	1425	0.8E
	1538	1857	0.6F		1658	2001	0.7F		1645	2006	0.7F		1750	2044	0.6F
	2238				2335				2331						
10 Tu	0357	0114	0.8E	25 W	0522	0143	0.9E	10 F	0509	0225	0.9E	25 Sa	0035	0249	0.8E
	0720	0.6F			0821	0.7F			0829	0.8F			0608	0903	0.6F
	1056	1337	0.8E		1158	1407	0.8E		1153	1450	0.9E		1258	1513	0.8E
	1618	1943	0.6F		1746	2041	0.7F		1733	2052	0.8F		1827	2121	0.6F
	2312														
11 W	0440	0201	0.8E	26 Th	0022	0231	0.8E	11 Sa	0017	0316	0.9E	26 Su	0122	0337	0.7E
	0805	0.7F			0608	0900	0.6F		0558	0916	0.8F		0644	0942	0.6F
	1130	1426	0.8E		1246	1456	0.8E		1244	1542	0.9E		1346	1601	0.7E
	1703	2027	0.7F		1829	2119	0.6F		1822	2141	0.7F		1902	2204	0.5F
	2349														
12 Th	0526	0251	0.9E	27 F	0111	0320	0.8E	12 Su	0113	0407	0.9E	27 M	0210	0425	0.7E
	0849	0.7F			0650	0939	0.6F		0649	1008	0.7F		0721	1030	0.5F
	1211	1516	0.9E		1336	1544	0.8E		1343	1633	0.9E		1435	1649	0.7E
	1750	2113	0.7F		1910	2201	0.6F		1917	2237	0.7F		1941	2256	0.5F
13 F	0035	0341	0.9E	28 Sa	0200	0408	0.7E	13 M	0214	0459	0.9E	28 Tu	0259	0513	0.7E
	0614	0936	0.7F		0730	1024	0.5F		0746	1106	0.7F		0802	1122	0.5F
	1302	1606	0.9E		1425	1632	0.7E		1446	1725	0.9E		1525	1738	0.6E
	1839	2202	0.7F		1950	2249	0.5F		2016	2336	0.7F		2026	2347	0.5F
14 Sa	0130	0431	0.9E	29 Su	0250	0455	0.7E	14 Tu	0318	0552	0.9E	29 W	0350	0604	0.6E
	0706	1030	0.7F		0811	1113	0.5F		0850	1205	0.7F		0854	1211	0.5F
	1359	1657	0.9E		1515	1720	0.7E		1551	1820	0.8E		1618	1830	0.6E
	1932	2259	0.7F		2034	2337	0.5F		2126				2125		
15 Su	0229	0522	0.9E	30 M	0339	0544	0.6E	15 W	0426	0032	0.7F	30 Th	0447	0033	0.5F
	0801	1128	0.7F		0900	1200	0.5F		1002	0649	0.8E		0657	0.6E	
	1500	1749	0.9E		1606	1810	0.6E		1659	1300	0.7F		0956	1256	0.5F
	2032	2356	0.7F		2128				2236	1917	0.8E		1716	1924	0.6E
													2224		
				31 Tu	0433	0021	0.5F					31 F	0542	0120	0.5F
					0956	0636	0.6E						0750	0.6E	
					1700	1242	0.5F						1050	1346	0.5F
					2221	1903	0.6E						1808	2016	0.7E
													2315		

Time meridian 75° W. 0000 is midnight. 1200 is noon.

Time meridian 75° W. 0000 is midnight, 1200 is noon.

F-Flood, Dir. 090° True E-Ebb, Dir. 289° True

NOVEMBER

DECEMBER

DECEMBER																							
Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.			
Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1 Th	0049	0403	0.8F	16 F	0206	0457	0.5F	1 Sa	0124	0431	0.8F	16 Su	0214	0453	0.5F								
	0740	1016	1.0E		0841	1040	0.7E		0809	1043	1.0E		0857	1100	0.7E								
	1318	1628	0.8F		1425	1711	0.5F		1353	1658	0.8F		1431	1712	0.5F								
	2005	2242	1.0E		2103	2304	0.7E		2037	2310	1.0E		2119	2324	0.7E								
2 F	0146	0453	0.8F	17 Sa	0242	0526	0.5F	2 Su	0221	0525	0.8F	17 M	0247	0533	0.5F								
	0830	1108	1.0E		0925	1128	0.7E		0905	1136	1.0E		0940	1148	0.7E								
	1412	1719	0.8F		1458	1744	0.5F		1449	1753	0.9F		1503	1754	0.5F								
	2056	2334	1.0E		2146	2351	0.7E		2133				2200										
3 Sa	0238	0545	0.9F	18 Su	0314	0605	0.5F	3 M	0316	0002	1.0E	18 Tu		0011	0.7E								
	0922	1159	1.0E		1006	1214	0.5F		1000	0623	0.9F		0318	0618	0.5F								
	1503	1813	0.9F		1528	1826	0.5F		1543	1228	1.0E		1019	1233	0.7E								
	2149				2225				2229	1852	0.9F		1532	1842	0.5F								
4 Su		0025	1.1E	19 M		0036	0.7E	4 Tu		0053	1.0E	19 W		0056	0.7E								
	0330	0640	0.9F		0342	0648	0.5F		0412	0720	0.8F		0348	0705	0.5F								
	1016	1250	1.1E		1043	1259	0.7E		1056	1319	1.0E		1055	1319	0.7E								
	1556	1908	0.9F		1557	1910	0.5F		1641	1947	0.8F		1605	1927	0.5F								
	2242				2301				2323				2310										
5 M	0424	0115	1.0E	20 Tu	0412	0121	0.7E	5 W	0510	0145	1.0E	20 Th	0424	0142	0.7E								
	1109	1341	1.0E		1118	1344	0.7E		1151	1411	1.0E		1126	1406	0.6F								
	1652	2001	0.8F		1630	1953	0.5F		1739	2039	0.8F		1644	2010	0.6F								
	2338				2335								2340										
6 Tu	0522	0207	1.0E	21 W	0449	0208	0.7E	6 Th	0019	0237	0.9E	21 F	0505	0230	0.8E								
	1206	0827	0.8F		1149	0814	0.5F		0608	0904	0.8F		1155	0831	0.6F								
	1751	1433	1.0E		1709	1433	0.7E		1248	1504	0.9E		1727	1455	0.8E								
		2053	0.8F			2034	0.6F		1836	2131	0.7F			2052	0.6F								
7 W	0036	0300	0.9E	22 Th	0005	0258	0.7E	7 F	0117	0330	0.9E	22 Sa	0013	0320	0.8E								
	0620	0919	0.8F		0530	0855	0.6F		0703	1000	0.7F		0548	0914	0.6F								
	1307	1527	0.9E		1224	1523	0.7E		1346	1556	0.8E		1235	1545	0.8E								
	1850	2147	0.7F		1751	2117	0.6F		1930	2230	0.7F		1811	2137	0.6F								
8 Th	0137	0354	0.9E	23 F	0048	0348	0.7E	8 Sa	0215	0422	0.8E	23 Su	0100	0409	0.8E								
	0719	1018	0.7F		0612	0940	0.6F		0757	1101	0.6F		0634	1001	0.6F								
	1408	1620	0.8E		1316	1612	0.7E		1442	1647	0.8E		1326	1634	0.8E								
	1948	2250	0.7F		1836	2205	0.6F		2025	2330	0.6F		1859	2228	0.6F								
9 F	0238	0446	0.8E	24 Sa	0141	0437	0.7E	9 Su	0310	0512	0.8E	24 M	0153	0458	0.8E								
	0818	1122	0.6F		0700	1031	0.6F		0855	1157	0.6F		0724	1056	0.6F								
	1508	1712	0.8E		1406	1701	0.7E		1538	1737	0.7E		1419	1723	0.8E								
	2050	2352	0.6F		1926	2259	0.6F		2125				1951	2324	0.6F								
10 Sa	0337	0539	0.8E	25 Su	0230	0526	0.7E	10 M		0023	0.6F	25 Tu	0248	0549	0.8E								
	0924	1222	0.6F		0752	1127	0.6F		0405	0603	0.7E		0820	1151	0.7F								
	1606	1806	0.7E		1457	1752	0.8E		0954	1245	0.6F		1517	1816	0.8E								
	2155				2021	2354	0.6F		1633	1829	0.7E		2050										
11 Su		0051	0.6F	26 M	0324	0618	0.8E	11 Tu		0110	0.5F	26 W		0018	0.7F								
	0435	0633	0.7E		0851	1220	0.6F			0500	0655	0.6E		0347	0643	0.8E							
	1024	1323	0.6F		1552	1845	0.8E			1045	1337	0.5F		0922	1244	0.7F							
	1703	1900	0.7E		2122					1727	1921	0.6E		1619	1911	0.9E							
	2251									2309				2154									
12 M	0531	0201	0.6F	27 Tu	0422	0044	0.6F	12 W	0553	0215	0.5F	27 Th	0452	0110	0.7F								
	1116	0727	0.7E		0952	0712	0.8E			1131	0746	0.6E		1025	0738	0.9E							
	1758	1437	0.6F		1653	1310	0.7F			1819	1447	0.5F		1725	1338	0.7F							
	2311	1952	0.7E		2222	1939	0.8E			2354	2011	0.6E		2257	2005	0.9E							
13 Tu		0306	0.5F	28 W		0137	0.7F	13 Th		0312	0.5F	28 F		0209	0.7F								
	0624	0817	0.7E		0523	0805	0.9E		0643	0835	0.6E		0556	0832	0.9E								
	1205	1531	0.5F		1052	1407	0.7F		1217	1533	0.5F		1128	1441	0.7F								
	1848	2041	0.7E		1751	2031	0.9E		1906	2058	0.6E		1827	2058	0.9E								
					2321																		
14 W	0031	0353	0.5F	29 Th	0619	0238	0.7F	14 F	0042	0352	0.5F	29 Sa	0000	0313	0.8F								
	0712	0904	0.7E		1150	0857	0.9E		0729	0922	0.6E		0657	0925	0.9E								
	1258	1613	0.5F		1848	1508	0.7F		1308	1607	0.5F		1232	1544	0.8F								
	1935	2128	0.7E			2123	0.9E		1951	2146	0.6E		1926	2152	1.0E								
15 Th	0123	0429	0.5F	30 F	0021	0337	0.8F	15 Sa	0133	0421	0.5F	30 Su	0106	0413	0.8F								
	0757	0952	0.7E		0716	0949	1.0E		0813	1010	0.6E		0753	1019	1.0E								
	1346	1644	0.5F		1253	1605	0.8F		1355	1636	0.5F		1338	1640	0.8F								
	2019	2216	0.7E		1942	2216	1.0E		2036	2235	0.7E		2022	2247	1.0E								
																	</						

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

JANUARY								FEBRUARY											
Day	Slack Water Time		Maximum Current Time Vel.		Day	Slack Water Time		Maximum Current Time Vel.		Day	Slack Water Time		Maximum Current Time Vel.		Day	Slack Water Time		Maximum Current Time Vel.	
	h.m.		h.m.	knots		n.m.	h.m.	knots	h.m.			h.m.	knots	h.m.			h.m.	knots	
1	0011	0307	4.9E		16	0118	0414	4.5E		1	0127	0424	4.9E		16	0208	0453	4.3E	
M	0633	0929	3.5F		Tu	0751	1043	3.2F		Th	0756	1051	3.4F		F	0837	1128	2.9F	
	1236	1534	4.9E			1344	1636	4.4E			1359	1650	4.7E			1436	1718	4.1E	
	1903	2155	3.4F			2016	2305	3.0F			2017	2315	3.4F			2056	2347	2.8F	
2	0057	0356	4.9E		17	0204	0457	4.3E		2	0223	0518	4.8E		17	0256	0542	4.1E	
Tu	0723	1019	3.4F		W	0839	1131	3.0F		F	0857	1149	3.2F		Sa	0928	1219	2.7F	
	1325	1621	4.8E			1430	1719	4.2E			1458	1747	4.5E			1526	1806	3.9E	
	1951	2244	3.3F			2103	2354	2.8F			2118					2147			
3	0147	0447	4.8E		18	0251	0542	4.2E		3		0016	3.2F		18		0039	2.7F	
W	0818	1112	3.3F		Th	0930	1219	2.8F		Sa	0325	0619	4.6E		Su	0348	0635	4.0E	
	1418	1715	4.7E			1519	1807	4.1E			1005	1256	3.0F			1023	1313	2.6F	
	2044	2337	3.2F			2152					1603	1848	4.3E			1620	1859	3.8E	
4	0243	0542	4.7E		19		0043	2.7F		4		0123	3.1F		19		0136	2.7F	
Th	0919	1211	3.2F		F	0341	0633	4.1E		Su	0433	0728	4.4E		M	0444	0730	4.0E	
	1517	1810	4.6E			1022	1310	2.7F			1117	1411	3.0F			1121	1411	2.6F	
	2143					1609	1856	4.0E			1712	2000	4.2E			1717	1958	3.9E	
						2243					2338					2338			
5		0039	3.2F		20		0134	2.7F		5		0240	3.1F		20		0233	2.8F	
F	0344	0643	4.7E		Sa	0432	0724	4.1F		M	0543	0843	4.4E		Tu	0541	0832	4.1E	
	1025	1316	3.1F			1116	1406	2.6F			1227	1524	3.0F			1217	1509	2.8F	
	1620	1911	4.5E			1702	1948	3.9E			1820	2115	4.2E			1812	2055	4.0E	
	2247					2335													
6		0142	3.2F		21		0227	2.7F		6	0046	0353	3.2F		21	0031	0331	3.0F	
Sa	0449	0747	4.7E		Su	0525	0819	4.1E		Tu	0650	1000	4.5E		W	0636	0925	4.2E	
	1134	1424	3.1F			1209	1459	2.7F			1331	1631	3.2F			1308	1602	3.0F	
	1726	2016	4.5E			1755	2043	4.0E			1922	2228	4.4E			1903	2146	4.2E	
	2353																		
7		0251	3.2F		22	0025	0318	2.8F		7	0148	0457	3.4F		22	0121	0423	3.2F	
Su	0555	0856	4.7E		M	0617	0912	4.2E		W	0751	1107	4.6E		Th	0727	1019	4.5E	
	1240	1531	3.2F			1300	1552	2.8F			1427	1730	3.4F			1355	1648	3.2F	
	1830	2124	4.5E			1845	2134	4.1E			2019	2329	4.6E			1951	2239	4.5E	
8	0057	0357	3.4F		23	0112	0408	3.0F		8	0243	0550	3.6F		23	0207	0508	3.5F	
M	0658	1003	4.8E		Tu	0706	1004	4.4E		Th	0846	1201	4.8E		F	0815	1107	4.7E	
	1342	1635	3.3F			1347	1638	3.0F			1518	1819	3.5F			1439	1733	3.4F	
	1932	2229	4.6E			1933	2225	4.3E			2110					2036	2327	4.8E	
9	0158	0501	3.5F		24	0157	0454	3.2F		9		0018	4.7E		24	0252	0552	3.7F	
Tu	0758	1108	4.9E		W	0754	1051	4.6E		F	0334	0639	3.7F		Sa	0901	1153	4.9E	
	1440	1736	3.4F			1430	1722	3.2F			0936	1248	4.9E			1520	1815	3.7F	
	2029	2330	4.7E			2018	2308	4.5E			1604	1905	3.6F			2119			
											2156								
10	0255	0558	3.6F		25	0239	0535	3.4F		10		0103	4.8E		25		0012	5.0E	
W	0855	1205	5.0E		Th	0839	1136	4.8E		Sa	0420	0724	3.7F		Su	0336	0638	3.9F	
	1534	1830	3.5F			1512	1802	3.3F			1022	1327	4.9E			0945	1236	5.1E	
	2123					2102	2353	4.7E			1647	1946	3.6F			1602	1858	3.8F	
											2240					2202			
11		0026	4.8E		26	0321	0618	3.5F		11		0144	4.9E		26		0055	5.1E	
Th	0348	0651	3.7F		F	0923	1217	4.9E		Su	0504	0805	3.7F		M	0420	0720	4.0F	
	0948	1256	5.0E			1552	1844	3.5F			1105	1406	4.8E			1030	1319	5.1E	
	1624	1921	3.6F			2143					1728	2025	3.6F			1643	1942	3.9F	
	2213										2322					2246			
12		0117	4.9E		27		0035	4.9E		12		0221	4.8E		27		0140	5.2E	
F	0439	0741	3.7F		Sa	0402	0659	3.7F		M	0546	0845	3.6F		Tu	0505	0805	4.0F	
	1038	1345	5.0E			1006	1300	5.0E			1146	1440	4.7E			1115	1406	5.1E	
	1712	2008	3.6F			1632	1925	3.6F			1808	2103	3.5F			1726	2025	3.9F	
	2302					2225										2332			
13		0205	4.8E		28		0118	5.0E		13	0003	0257	4.7E		28		0225	5.2E	
Sa	0528	0828	3.6F		Su	0444	0741	3.8F		Tu	0627	0923	3.5F		W	0552	0850	3.9F	
	1126	1428	4.9E			1049	1343	5.1E			1227	1516	4.6E			1202	1451	5.0E	
	1759	2055	3.5F			1712	2004	3.7F			1848	2140	3.3F			1811	2110	3.8F	
	2348					2307													
14		0250	4.8E		29		0201	5.1E		14	0043	0335	4.6E						
Su	0616	0913	3.5F		M	0527	0826	3.8F		W	0708	1004	3.3F						
	1213	1514	4.8E			1132	1426	5.1E			1308	1555	4.4E						
	1844	2136	3.4F			1753	2047	3.7F			1928	2220	3.2F						
						2350													
15	0033	0332	4.7E		30		0248	5.1E		15	0125	0412	4.4E						
M	0703	1001	3.3F		Tu	0613	0911	3.7F		Th	0751	1044	3.1F						
	1258	1555	4.6E			1218	1510	5.0E			1350	1633	4.3E						
	1930	2222	3.2F			1837	2132	3.6F			2010	2302	3.0F						
					31	0037	0335	5.0E											
					W	0702	0958	3.6F											
						1306	1559	4.9E											
						1924	2222	3.5F											

Time meridian 75° W. 0000 is midnight. 1200 is noon.

HELL GATE (off Mill Rock), EAST RIVER, NEW YORK, 1990

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

MARCH

APRIL

APRIL															
Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.			
Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1 Th	0020 0642 1251 1900	0313 0940 1538 2201	5.1E 3.7F 4.8E 3.6F	16 F	0049 0708 1315 1922	0335 1004 1555 2221	4.5E 3.2F 4.3E 3.1F	1 Su	0159 0828 1436 2049	0449 1125 1718 2354	4.5E 3.2F 4.2E 3.2F	16 M	0141 0802 1412 2015	0433 1100 1652 2319	4.3E 2.9F 4.1E 2.9F
2 F	0112 0737 1345 1955	0404 1033 1631 2256	4.9E 3.5F 4.6E 3.4F	17 Sa	0130 0750 1359 2005	0418 1047 1638 2305	4.3E 3.0F 4.1E 2.9F	2 M	0305 0938 1544 2203	0554 1238 1829 4.0E	4.3E 3.0F 4.0E	17 Tu	0232 0854 1503 2110	0520 1151 1745 4.0E	4.2E 2.8F 4.0E
3 Sa	0209 0839 1446 2059	0501 1134 1729 4.3E	4.7E 3.2F 4.3E	18 Su	0216 0839 1448 2054	0503 1134 1725 2354	4.2E 2.8F 3.9E 2.8F	3 Tu	0416 1049 1653 2315	0111 0716 1357 1956	3.0F 4.1E 2.9F 3.9E	18 W	0328 0951 1559 2210	0014 0615 1246 1843	2.9F 4.1E 2.8F 4.0E
4 Su	0314 0949 1553 2212	0604 1243 1836 4.1E	4.4E 3.0F 4.1E	19 M	0309 0933 1541 2150	0555 1227 1820 3.9E	4.0E 2.7F 3.9E	4 W	0525 1155 1757 2320	0227 0844 1505 2115	3.1F 4.1E 3.0F 4.1E	19 Th	0427 1049 1656 2311	0114 0714 1345 1942	2.9F 4.2E 2.9F 4.2E
5 M	0425 1103 1704 2326	0718 1404 1954 4.0E	4.2E 2.9F 4.0E	20 Tu	0406 1032 1639 2250	0650 1327 1917 3.9E	4.0E 2.7F 3.9E	5 Th	0628 1253 1853	0334 0953 1604 2215	3.2F 4.2E 3.2F 4.3E	20 F	0526 1145 1751	0213 0812 1441 2039	3.1F 4.3E 3.1F 4.4E
6 Tu	0537 1213 1812	0235 0842 1517 2118	3.0F 4.2E 3.0F 4.1E	21 W	0506 1131 1736 2349	0749 1427 2015 4.0E	2.8F 4.0E 2.8F 4.0E	6 F	0723 1343 1943	0428 1042 1651 2300	3.4F 4.4E 3.4F 4.5E	21 Sa	0622 1237 1844	0312 0907 1538 2134	3.3F 4.5E 3.4F 4.7E
7 W	0643 1315 1912	0347 1000 1622 2229	3.2F 4.3E 3.2F 4.3E	22 Th	0603 1226 1829	0849 1521 2112	3.0F 4.2E 3.0F 4.3E	7 Sa	0810 1427 2026	0517 1128 1736 2339	3.5F 4.5E 3.5F 4.6E	22 Su	0715 1328 1935	0406 1002 1629 2228	3.6F 4.7E 3.6F 4.9E
8 Th	0742 1408 2005	0448 1101 1714 2324	3.4F 4.5E 3.4F 4.5E	23 F	0657 1316 1919	0943 1612 2209	4.4E 3.3F 4.6E	8 Su	0852 1507 2107	0556 1201 1813	3.6F 4.6E 3.6F	23 M	0807 1417 2025	0457 1055 1717 2319	3.8F 4.9E 3.8F 5.1E
9 F	0833 1455 2052	0537 1148 1801	3.6F 4.6E 3.5F	24 Sa	0747 1402 2007	1035 1700 2258	3.5F 4.7E 3.6F 4.8E	9 M	0932 1544 2145	0633 1231 1846	3.7F 4.6E 3.6F	24 Tu	0857 1505 2115	0548 1144 1807	3.9F 5.0E 4.0F
10 Sa	0918 1537 2135	0624 1227 1842	3.7F 4.7E 3.6F	25 Su	0835 1447 2053	0526 1124 1746 2345	3.8F 4.9E 3.8F 5.1E	10 Tu	1045 1620 2222	0945 0708 1259 1921	4.8E 3.7F 4.6E 3.6F	25 W	0939 1544 2205	0638 1234 1857	5.3E 4.0F 5.1E 4.0F
11 Su	0955 1616 2215	0641 1300 1919	4.8E 3.7F 4.7E 3.7F	26 M	0922 1531 2139	0612 1209 1832	4.0F 5.0E 4.0F	11 W	1047 1655 2259	0115 0741 1333 1954	4.8E 3.6F 4.6E 3.6F	26 Th	1037 1644 2256	0101 0728 1323 1946	5.3E 4.0F 5.0E 4.0F
12 M	1035 1654 2253	0704 1333 1952	4.7E 3.7F 4.7E 3.6F	27 Tu	1009 1616 2225	1256 1917 4.0F	5.2E 4.0F	12 Th	1124 1731 2336	0816 1406 2029	3.5F 4.6E 3.5F	27 F	1129 1737 2350	0152 0819 1416 2041	5.2E 3.8F 4.9E 3.8F
13 Tu	1051 1730 2331	0815 1406 2028	3.7F 4.7E 3.6F	28 W	1045 1656 2314	0745 1343 2004	4.0F 5.1E 4.0F	13 F	1202 1807	0225 2106	4.7E 3.4F 4.5E 3.3F	28 Sa	1223 1834	0244 0913 1507 2136	5.0E 3.6F 4.7E 3.6F
14 W	1050 1730 2331	0847 1440 2103	3.6F 4.6E 3.4F	29 Th	1053 1715	0834 1431 2053	3.9F 5.0E 3.9F	14 Sa	1242 1845	1524 2145	4.3E 3.2F	29 Su	1321 1935	0339 1014 1604 2237	4.8E 3.4F 4.5E 3.4F
15 Th	1059 1735 2335	0858 1454 2110	4.6E 3.4F 4.5E 3.3F	30 F	1059 1727 2345	0859 1522 2145	5.1E 3.7F 4.8E 3.7F	15 Su	1256 1859	1607 2230	4.2E 3.1F 3.1F	30 M	1423 2042	0439 1118 1709 2346	4.5E 3.2F 4.2E 3.2F
				31 Sa	1059 1725 2344	0859 1521 2146	5.1E 3.5F 4.5E 3.4F								

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

MAY												JUNE											
Slack Water				Maximum Current				Slack Water				Maximum Current				Slack Water				Maximum Current			
Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.				
	h.m.				h.m.				h.m.				h.m.				h.m.			h.m.			
1 Tu	0252	0547	4.3E	16	0159	0453	4.4E	1		0138	3.0F	16		0006	3.2F								
	0925	1230	3.0F	W	0824	1118	3.0F	F	0428	0741	4.1E	Sa	0315	0607	4.5E								
	1527	1822	4.1E		1426	1715	4.3E		1100	1408	3.0F		0935	1234	3.2F								
	2151				2040	2342	3.1F		1654	2014	4.2E		1540	1835	4.6E								
									2329				2209										
2 W		0101	3.1F	17	0252	0544	4.4E	2		0235	3.0F	17		0106	3.2F								
	0358	0706	4.1E	Th	0916	1213	3.0F	Sa	0523	0840	4.1E	Su	0413	0704	4.5E								
	1031	1339	3.0F		1519	1810	4.3E		1152	1457	3.0F		1032	1329	3.3F								
	1630	1942	4.0E		2138				1745	2103	4.2E		1639	1934	4.7E								
	2258												2312										
3 Th		0213	3.1F	18		0037	3.1F	3	0021	0325	3.0F	18		0207	3.3F								
	0502	0823	4.1E	F	0349	0640	4.4E	Su	0613	0927	4.1E	M	0514	0804	4.6E								
	1132	1440	3.0F		1011	1309	3.1F		1239	1544	3.1F		1132	1433	3.4F								
	1730	2053	4.1E		1615	1907	4.4E		1833	2151	4.3E		1740	2035	4.8E								
	2359				2239																		
4 F		0310	3.1F	19		0136	3.2F	4	0107	0413	3.1F	19	0015	0308	3.4F								
	0600	0925	4.2E	Sa	0447	0737	4.5E	M	0700	1006	4.2E	Tu	0615	0903	4.6E								
	1226	1533	3.1F		1107	1404	3.2F		1323	1623	3.2F		1232	1531	3.5F								
	1823	2146	4.3E		1712	2007	4.6E		1917	2228	4.4E		1840	2137	4.9E								
					2339																		
5 Sa	0052	0403	3.2F	20		0236	3.3F	5	0151	0451	3.2F	20	0116	0409	3.5F								
	0652	1010	4.3E	Su	0546	0834	4.6E	Tu	0743	1045	4.3E	W	0714	1006	4.7E								
	1313	1623	3.3F		1203	1501	3.4F		1404	1704	3.2F		1331	1632	3.6F								
	1911	2229	4.4E		1809	2104	4.8E		1959	2303	4.5E		1939	2238	5.0E								
6 Su	0139	0448	3.3F	21	0038	0334	3.5F	6	0232	0530	3.2F	21	0215	0511	3.6F								
	0738	1051	4.3E	M	0642	0931	4.7E	W	0824	1120	4.4E	Th	0812	1104	4.8E								
	1356	1702	3.4F		1257	1600	3.6F		1443	1743	3.3F		1429	1730	3.7F								
	1953	2306	4.5E		1904	2159	5.0E		2040	2339	4.6E		2037	2336	5.1E								
7 M	0221	0525	3.4F	22	0134	0432	3.6F	7	0311	0609	3.3F	22	0312	0608	3.6F								
	0819	1124	4.4E	Tu	0738	1027	4.8E	Th	0905	1155	4.5E	F	0909	1201	4.9E								
	1436	1739	3.4F		1351	1651	3.8F		1521	1818	3.4F		1526	1828	3.8F								
	2033	2339	4.6E		1959	2255	5.1E		2120				2134										
8 Tu	0300	0602	3.5F	23	0230	0527	3.8F	8		0016	4.7E	23		0034	5.1E								
	0859	1155	4.5E	W	0832	1122	4.9E	F	0350	0644	3.3F	Sa	0407	0704	3.7F								
	1513	1814	3.5F		1444	1746	3.9F		0944	1231	4.5E		1004	1258	4.9E								
	2112				2053	2351	5.2E		1559	1856	3.4F		1622	1924	3.8F								
									2159				2229										
9 W		0010	4.7E	24	0324	0620	3.8F	9		0053	4.7E	24		0129	5.0E								
	0338	0637	3.5F	Th	0925	1215	5.0E	Sa	0429	0721	3.3F	Su	0501	0757	3.7F								
	0937	1225	4.5E		1538	1840	3.9F		1024	1309	4.6E		1058	1352	4.8E								
	1550	1847	3.5F		2147				1637	1933	3.4F		1717	2021	3.7F								
	2150								2239				2323										
10 Th		0044	4.7E	25		0045	5.2E	10		0132	4.8E	25		0224	4.9E								
	0415	0710	3.5F	F	0418	0714	3.8F	Su	0508	0759	3.3F	M	0555	0851	3.6F								
	1015	1300	4.6E		1019	1308	4.9E		1103	1348	4.6E		1151	1447	4.8E								
	1626	1922	3.5F		1632	1933	3.9F		1715	2015	3.4F		1813	2114	3.6F								
	2228				2241				2319														
11 F		0120	4.8E	26		0139	5.1E	11		0213	4.8E	26	0017	0316	4.8E								
	0453	0747	3.4F	Sa	0513	0808	3.7F	M	0547	0838	3.3F	Tu	0648	0945	3.5F								
	1053	1337	4.5E		1113	1402	4.9E		1143	1431	4.6E		1243	1539	4.6E								
	1702	2000	3.4F		1728	2029	3.8F		1755	2054	3.4F		1908	2211	3.5F								
	2306				2336																		
12 Sa		0157	4.7E	27		0235	5.0E	12	0000	0254	4.7E	27	0110	0411	4.6E								
	0531	0824	3.3F	Su	0609	0903	3.6F	Tu	0627	0919	3.2F	W	0740	1037	3.3F								
	1131	1414	4.5E		1208	1458	4.7E		1223	1514	4.6E		1336	1634	4.5E								
	1739	2037	3.3F		1826	2127	3.6F		1837	2137	3.3F		2003	2305	3.3F								
	2345																						
13 Su		0236	4.7E	28	0033	0329	4.8E	13	0044	0338	4.7E	28	0203	0502	4.4E								
	0610	0903	3.2F	M	0706	1001	3.4F	W	0709	1002	3.2F	Th	0833	1132	3.2F								
	1211	1455	4.4E		1304	1555	4.5E		1307	1601	4.6E		1428	1728	4.3E								
	1818	2116	3.3F		1926	2228	3.4F		1922	2222	3.3F		2059										
14 M	0026	0319	4.6E	29	0131	0430	4.6E	14	0130	0425	4.6E	29		0000	3.1F								
	0651	0945	3.1F	Tu	0805	1102	3.2F	Th	0754	1048	3.2F	F	0256	0554	4.2E								
	1253	1539	4.4E		1402	1659	4.4E		1353	1648	4.6E		0926	1228	3.0F								
	1900	2201	3.2F		2029	2331	3.2F		2013	2313	3.2F		1521	1822	4.2E								
15 Tu	0110	0404	4.5E	30	0231	0532	4.4E	15	0221	0514	4.6E	30		0055	3.0F								
	0736	1031	3.0F	W	0905	1205	3.1F	F	0842	1139	3.2F	Sa	0349	0650	4.1E								
	1337	1624	4.3E		1501	1802	4.2E		1445	1739	4.6E		1018	1321	2.9F								
	1947	2249	3.1F		2131				2109				1613	1915	4.1E								
													2249										
				31		0035	3.1F																
				Th	0330	0635	4.2E																
					1004	1308	3.0F																
					1558	1911	4.2E																
					2232																		

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

JULY

AUGUST

AUGUST															
Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.			
Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1 Su	0442	0150	2.9F	16 M	0348	0039	3.2F	1 W	0547	0246	2.8F	16 Th	0548	0240	3.1F
	1110	0743	4.0E		1001	0636	4.5E		1203	0830	3.9E		0832	0832	4.2E
	1704	1412	2.9F		1616	1305	3.3F		1809	1508	2.9F		1159	1509	3.3F
	2341	2009	4.1E		2247	1909	4.6E			2102	4.0E		1820	2115	4.4E
2 M	0532	0242	2.9F	17 Tu	0452	0142	3.2F	2 Th	0637	0339	2.9F	17 F	0653	0354	3.3F
	1159	0832	4.0E		1106	0739	4.4E		1252	0921	3.9E		1306	0944	4.3E
	1754	1501	2.9F		1721	1408	3.3F		1859	1557	3.0F		1924	1619	3.5E
		2102	4.1E		2355	2013	4.6E			2154	4.2E			2226	4.5E
3 Tu	0030	0331	2.9F	18 W	0557	0249	3.2F	3 F	0125	0426	3.0F	18 Sa	0147	0455	3.5F
	0621	0921	4.0E		1212	0842	4.4E		0725	1010	4.1E		0753	1051	4.5E
	1245	1550	3.0F		1826	1515	3.4F		1337	1642	3.2F		1406	1720	3.7F
	1842	2144	4.2E			2121	4.7E		1946	2238	4.3E		2022	2327	4.7E
4 W	0117	0416	3.0F	19 Th	0100	0356	3.3F	4 Sa	0210	0508	3.2F	19 Su	0242	0548	3.6F
	0708	1003	4.1E		0700	0950	4.5E		0810	1055	4.3E		0846	1147	4.6E
	1329	1631	3.1F		1316	1623	3.5F		1420	1724	3.4F		1500	1812	3.8F
	1927	2228	4.3E		1929	2229	4.8E		2030	2321	4.5E		2114		
5 Th	0201	0458	3.1F	20 F	0201	0501	3.5F	5 Su	0251	0548	3.4F	20 M		0018	4.8E
	0753	1045	4.2E		0801	1054	4.6E		0852	1136	4.5E		0331	0637	3.7F
	1412	1711	3.2F		1417	1723	3.7F		1501	1805	3.6F		0936	1238	4.8E
	2011	2308	4.5E		2028	2330	4.8E		2113				1550	1859	3.9F
6 F	0243	0538	3.2F	21 Sa	0259	0559	3.6F	6 M		0002	4.7E	21 Tu	0418	0104	4.8E
	0836	1124	4.4E		0857	1153	4.7E		0932	1217	3.5F		1023	0723	3.8F
	1452	1753	3.3F		1514	1820	3.8F		1541	1844	4.7E		1637	1321	4.8E
	2054	2349	4.6E		2124				2154		3.7F		2249	1946	3.9F
7 Sa	0324	0617	3.3F	22 Su		0027	4.9E	7 Tu		0043	4.8E	22 W		0145	4.8E
	0917	1205	4.5E		0352	0652	3.7F		0409	0706	3.6F		0501	0806	3.8F
	1532	1831	3.4F		0951	1249	4.8E		1012	1301	4.8E		1107	1402	4.8E
	2135				1608	1913	3.8F		1621	1925	3.8F		1721	2027	3.8F
					2218				2235				2333		
8 Su	0403	0028	4.7E	23 M	0443	0120	4.9E	8 W	0447	0124	4.9E	23 Th	0543	0225	4.7E
	0958	0655	3.4F		1042	0741	3.7F		1052	0745	3.7F		1150	0847	3.7F
	1610	1244	4.6E		1700	1340	4.8E		1701	1340	4.9E		1804	1441	4.7E
	2216	1909	3.5F		2308	2005	3.8F		2317	2005	3.8F		2108	2108	3.7F
9 M	0442	0108	4.8E	24 Tu	0531	0209	4.9E	9 Th	0526	0205	4.9E	24 F	0625	0303	4.5E
	1037	0733	3.4F		1131	0832	3.7F		1134	0824	3.7F		1233	0928	3.5F
	1649	1327	4.7E		1750	1429	4.8E		1744	1425	5.0E		1847	1522	4.5E
	2257	1948	3.6F		2357	2054	3.7F			2048	3.8F			2151	3.5F
10 Tu	0520	0147	4.8E	25 W	0619	0254	4.8E	10 F	0600	0248	4.9E	25 Sa	0100	0342	4.3E
	1107	0812	3.4F		1218	0919	3.6F		0606	0907	3.7F		0707	1007	3.3F
	1729	1406	4.8E		1839	1513	4.7E		1217	1508	4.9E		1317	1601	4.3E
	2338	2029	3.6F			2141	3.6F		1829	2133	3.7F		1931	2233	3.3F
11 W	0558	0230	4.9E	26 Th	0045	0340	4.6E	11 Sa	0046	0334	4.8E	26 Su	0145	0422	4.1E
	1157	0851	3.5F		0705	1004	3.4F		0649	0952	3.6F		0750	1049	3.1F
	1811	1449	4.8E		1306	1558	4.5E		1304	1557	4.9E		1403	1643	4.1E
		2110	3.6F		1928	2230	3.4F		1919	2224	3.6F		2017	2318	3.0F
12 Th	0021	0313	4.8E	27 F	0133	0421	4.4E	12 Su	0135	0421	4.7E	27 M	0232	0505	3.9E
	0639	0936	3.5F		0752	1050	3.2F		0738	1044	3.5F		0836	1138	2.9F
	1240	1535	4.8E		1353	1644	4.3E		1357	1648	4.7E		1452	1731	4.0E
	1856	2155	3.5F		2017	2318	3.2F		2015	2315	3.4F		2108		
13 F	0106	0358	4.8E	28 Sa	0221	0509	4.2E	13 M	0231	0514	4.5E	28 Tu		0006	2.9F
	0721	1021	3.4F		0840	1137	3.1F		0833	1141	3.4F		0323	0554	3.8E
	1326	1622	4.8E		1442	1732	4.2E		1456	1746	4.6E		0927	1229	2.8F
	1945	2247	3.4F		2107				2118				1545	1822	3.8E
													2203		
14 Sa	0155	0449	4.7E	29 Su	0310	0004	3.0F	14 Tu		0019	3.2F	29 W		0104	2.7F
	0809	1110	3.4F		0929	0554	4.0E		0333	0613	4.3E		0418	0648	3.6E
	1417	1713	4.7E		1532	1230	2.9F		0937	1244	3.3F		1022	1327	2.8F
	2040	2340	3.3F		2200	1818	4.0E		1602	1849	4.4E		1641	1919	3.8E
15 Su	0249	0539	4.6E	30 M		0058	2.8F	15 W		0126	3.1F	30 Th		0203	2.7F
	0902	1203	3.3F		0402	0645	3.9E		0440	0719	4.2E		0513	0745	3.7E
	1514	1808	4.7E		1020	1321	2.8F		1048	1355	3.2F		1118	1427	2.9F
	2142				1624	1914	3.9E		1711	2000	4.3E		1737	2017	3.8E
					2253				2339				2355		
				31 Tu	0454	0153	2.8F					31 F		0259	2.9F
					1112	0738	3.8E						0606	0842	3.8E
					1414	2124	2.8F						1211	1518	3.0F
					1717	2007	3.9E						1830	2115	4.0E
					2347										

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

SEPTEMBER

OCTOBER

Day	Slack Water			Day	Slack Water			Day	Slack Water			Day	Slack Water		
	Time	Maximum Current	Vel.		Time	Maximum Current	Vel.		Time	Maximum Current	Vel.		Time	Maximum Current	Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1	0046	0350	3.0F	16	0131	0442	3.5F	1	0053	0357	3.3F	16	0200	0511	3.6F
Sa	0656	0938	4.0E	Su	0741	1049	4.4E	M	0706	0950	4.4E	Tu	0806	1120	4.6E
	1300	1609	3.2F		1353	1708	3.7F		1312	1619	3.5F		1424	1735	3.7F
	1919	2206	4.2E		2010	2317	4.5E		1932	2216	4.5E		2034	2339	4.5E
2	0132	0435	3.3F	17	0222	0532	3.7F	2	0138	0442	3.6F	17	0243	0552	3.7F
Su	0741	1023	4.3E	M	0830	1136	4.6E	Tu	0750	1035	4.7E	W	0849	1153	4.7E
	1346	1655	3.5F		1443	1755	3.8F		1359	1704	3.8F		1506	1812	3.7F
	2004	2250	4.5E		2058				2017	2301	4.7E		2115		
3	0215	0516	3.5F	18	0307	0617	3.8F	3	0221	0523	3.8F	18	0322	0629	3.7F
M	0824	1108	4.6E	Tu	0916	1219	4.7E	W	0833	1122	4.9E	Th	0929	1230	4.7E
	1429	1736	3.7F		1528	1840	3.9F		1444	1749	3.9F		1546	1853	3.7F
	2048	2333	4.7E		2143				2102	2346	4.9E		2154		
4	0255	0555	3.7F	19	0349	0658	3.8F	4	0303	0607	3.9F	19	0400	0706	4.6E
Tu	0905	1151	4.8E	W	0958	1257	4.8E	Th	0917	1207	5.1E	F	1008	1301	4.7E
	1511	1818	3.9F		1611	1919	3.9F		1529	1832	4.0F		1624	1927	3.7F
	2130				2224				2146				2233		
5	0335	0636	3.8F	20	0429	0735	3.8F	5	0345	0650	4.0F	20	0437	0739	3.6F
W	0946	1234	5.0E	Th	1039	1331	4.8E	F	1001	1251	5.2E	Sa	1046	1335	4.7E
	1553	1859	4.0F		1651	1958	3.8F		1614	1917	4.1F		1702	2003	3.6F
	2212				2305				2232				2311		
6	0414	0716	3.9F	21	0508	0812	3.7F	6	0429	0735	4.0F	21	0514	0815	3.5F
Th	1027	1317	5.1E	F	1119	1407	4.7E	Sa	1048	1340	5.2E	Su	1124	1412	4.6E
	1635	1942	4.0F		1730	2034	3.7F		1702	2005	4.0F		1741	2039	3.4F
	2255				2345				2319				2351		
7	0454	0800	3.9F	22	0546	0849	3.6F	7	0515	0822	4.0F	22	0552	0851	3.4F
F	1110	1400	5.1E	Sa	1159	1445	4.5E	Su	1136	1427	5.1E	M	1204	1451	4.5E
	1720	2025	4.0F		1810	2113	3.5F		1752	2054	3.8F		1820	2119	3.3F
8	0537	0843	3.9F	23	0624	0927	3.4F	8	0606	0913	3.8F	23	0631	0932	3.2F
Sa	1156	1447	5.0E	Su	1240	1522	4.4E	M	1229	1520	4.9E	Tu	1246	1532	4.3E
	1807	2110	3.8F		1850	2151	3.3F		1847	2147	3.6F		1903	2201	3.1F
9	0622	0932	3.8F	24	0705	1008	3.2F	9	0702	1011	3.6F	24	0714	1017	3.1F
Su	1246	1535	4.9E	M	1324	1605	4.2E	Tu	1328	1615	4.6E	W	1332	1618	4.2E
	1858	2202	3.6F		1934	2236	3.1F		1948	2246	3.3F		1949	2247	2.9F
10	0714	1023	3.6F	25	0749	1052	3.0F	10	0806	1115	3.3F	25	0802	1106	2.9F
M	1341	1628	4.7E	Tu	1412	1650	4.0E	W	1433	1719	4.3E	Th	1422	1705	4.1E
	1956	2259	3.4F		2022	2325	2.9F		2056	2357	3.1F		2040	2338	2.8F
11	0813	1122	3.4F	26	0839	1147	2.9F	11	0919	1229	3.2F	26	0856	1201	2.9F
Tu	1444	1729	4.4E	W	1505	1741	3.9E	Th	1544	1832	4.1E	F	1517	1800	4.0E
	2103				2117				2208				2135		
12	0923	1234	3.2F	27	0935	1242	2.8F	12	1035	1350	3.1F	27	0955	1257	2.9F
W	1554	1836	4.2E	Th	1601	1839	3.8E	F	1655	1956	4.0E	Sa	1614	1855	4.0E
	2215				2215				2317				2231		
13	0433	0711	3.9E	28	0434	0704	3.7E	13	0528	0832	4.0E	28	0442	0721	4.1E
Th	1039	1354	3.2F	F	1034	1341	2.9F	Sa	1144	1501	3.3F	Su	1053	1356	3.0F
	1706	1955	4.1E		1659	1938	3.9E		1800	2112	4.2E		1710	1952	4.2E
	2328				2312								2325		
14	0542	0833	4.0E	29	0528	0801	3.8E	14	0627	0946	4.2E	29	0534	0820	4.3E
F	1152	1512	3.3F	Sa	1131	1440	3.0F	Su	1245	1600	3.4F	M	1149	1452	3.2F
	1815	2118	4.2E		1754	2033	4.0E		1858	2213	4.3E		1803	2046	4.4E
15	0645	0946	4.2E	30	0619	0859	4.1E	15	0720	1035	4.4E	30	0624	0911	4.6E
Sa	1256	1613	3.9F	Su	1224	1531	3.3F	M	1337	1651	3.6F	Tu	1242	1541	3.5F
	1916	2226	4.4E		1845	2127	4.3E		1949	2258	4.4E		1854	2139	4.6E
												31	0103	0406	3.6F
												W	0713	1005	4.8E
													1332	1632	3.7F
													1943	2228	4.8E

Time meridian 75° W. 0000 is midnight. 1200 is noon.

HELL GATE (off Mill Rock), EAST RIVER, NEW YORK, 1990

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

NOVEMBER

DECEMBER

DECEMBER											
NOVEMBER				DECEMBER				NOVEMBER			
Day	Slack Water Time	Maximum Current Time Vel.		Day	Slack Water Time	Maximum Current Time Vel.		Day	Slack Water Time	Maximum Current Time Vel.	
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 Th	0150 0800 1421 2031	0451 1054 1723 2319	3.8F 5.1E 3.9F 4.9E	16 F	0258 0857 1524 2122	0601 1201 1824 2357	3.5F 4.7E 3.5F	1 Sa	0217 0823 1456 2055	0517 1124 1749 2346	3.8F 5.2E 3.8F 5.0E
2 F	0237 0848 1510 2119	0540 1143 1809 2319	3.9F 5.2E 3.9F	17 Sa	0336 0936 1603 2200	0015 0637 1234 1901	4.5E 3.5F 4.7E 3.5F	2 Su	0309 0917 1550 2148	0609 1216 1844 2348	3.9F 5.3E 3.8F
3 Sa	0324 0937 1600 2208	0005 0627 1232 1857	5.0E 4.0F 5.3E 4.0F	18 Su	0413 1014 1640 2238	0049 0710 1307 1936	4.6E 3.5F 4.7E 3.4F	3 M	0403 1010 1644 2241	0039 0703 1309 1937	5.0E 3.9F 5.2E 3.8F
4 Su	0413 1027 1651 2259	0054 0716 1321 1949	5.0E 4.0F 5.2E 3.9F	19 M	0450 1052 1719 2317	0124 0747 1344 2011	4.5E 3.4F 4.7E 3.3F	4 Tu	0458 1105 1738 2335	0132 0759 1402 2032	5.0E 3.8F 5.1E 3.6F
5 M	0504 1119 1744 2351	0145 0808 1412 2041	4.9E 3.9F 5.1E 3.7F	20 Tu	0528 1131 1758 2357	0201 0826 1421 2050	4.5E 3.3F 4.6E 3.2F	5 W	0555 1200 1835	0226 0854 1457 2129	4.9E 3.7F 5.0E 3.5F
6 Tu	0559 1214 1841	0236 0903 1506 2137	4.8E 3.7F 4.9E 3.5F	21 W	0607 1212 1839	0240 0903 1504 2129	4.4E 3.2F 4.6E 3.1F	6 Th	0631 1258 1933	0322 0951 1555 2227	4.7E 3.5F 4.8E 3.3F
7 W	0659 1314 1943	0333 0948 1605 2238	4.6E 3.5F 4.6E 3.3F	22 Th	0638 1255 1923	0323 0948 1549 2214	4.4E 3.1F 4.5E 3.0F	7 F	0756 1357 2034	0421 1056 1656 2330	4.5E 3.3F 4.5E 3.1F
8 Th	0805 1418 2049	0433 1106 1709 2350	4.3E 3.3F 4.4E 3.1F	23 F	0734 1341 2009	0407 1033 1634 2259	4.3E 3.0F 4.4E 2.9F	8 Sa	0827 1458 2135	0525 1201 1800	4.4E 3.1F 4.3E
9 F	0915 1525 2156	0544 1222 1823	4.2E 3.1F 4.2E	24 Sa	0824 1432 2058	0456 1125 1721 2350	4.3E 3.0F 4.3E 2.9F	9 Su	0937 1505 2158 2335	0635 1307 1911	3.0F 4.3E 3.0F 4.2E
10 Sa	0358 1025 1632 2301	0100 0702 1335 1942	3.0F 4.1E 3.1F 4.1E	25 Su	0258 0919 1526 2151	0549 1216 1817	4.3E 3.0F 4.3E	10 M	0425 1106 1657 2331	0138 0745 1410 2015	3.0F 4.2E 3.0F 4.1E
11 Su	0501 1130 1733 2359	0209 0818 1443 2053	3.1F 4.2E 3.1F 4.2E	26 M	0351 1017 1622 2244	0045 0642 1313 1912	3.0F 4.4E 3.0F 4.4E	11 Tu	0521 1203 1751	0236 0846 1505	3.0F 4.3E 3.0F 4.2E
12 M	0558 1228 1829	0310 0921 1538 2147	3.2F 4.3E 3.3F 4.3E	27 Tu	0446 1116 1719 2338	0139 0739 1411 2007	3.1F 4.5E 3.2F 4.5E	12 W	0613 1254 1841	0327 0940 1556 2157	3.0F 4.3E 3.0F 4.2E
13 Tu	0649 1319 1918	0359 1010 1625 2234	3.3F 4.4E 3.3F 4.4E	28 W	0542 1213 1815	0236 0837 1509 2104	3.3F 4.7E 3.3F 4.6E	13 Th	0700 1340 1927	0412 1021 1639 2238	3.1F 4.4E 3.1F 4.3E
14 W	0735 1404 2002	0442 1051 1710 2309	3.4F 4.5E 3.4F 4.4E	29 Th	0632 1309 1909	0331 0934 1603 2159	3.5F 4.9E 3.5F 4.8E	14 F	0744 1423 2009	0455 1058 1721 2313	3.2F 4.5E 3.2F 4.4E
15 Th	0817 1445 2043	0526 1128 1749 2342	3.4F 4.6E 3.5F 4.5E	30 F	0730 1403 2003	0426 1029 1657 2253	3.7F 5.1E 3.7F 4.9E	15 Sa	0826 1503 2050	0536 1133 1758 2348	3.3F 4.6E 3.2F 4.5E

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

JANUARY								FEBRUARY												
Day	Slack Water Time			Maximum Current Time Vel.			Day	Slack Water Time			Maximum Current Time Vel.			Day	Slack Water Time			Maximum Current Time Vel.		
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots			
1 M	0023 0655 1246 1941	0329 0942 1557 2211	1.9E 1.8F 2.1E 1.6F	16 Tu	0111 0758 1322 2025	0417 1025 1637 2259	1.8E 1.5F 1.9E 1.6F	1 Th	0142 0836 1354 2045	0451 1100 1706 2329	2.0E 1.6F 2.0E 1.9F	16 F	0209 0918 1412 2118	0521 1122 1731 2348	1.6E 1.1F 1.5E 1.5F					
2 Tu	0113 0753 1331 2027	0418 1031 1644 2303	1.9E 1.7F 2.0E 1.7F	17 W	0200 0855 1405 2114	0507 1112 1725 2344	1.6E 1.3F 1.7E 1.5F	2 F	0239 0941 1447 2143	0554 1155 1808 1.9E	1.9E 1.4F 1.9E	17 Sa	0300 1016 1502 2211	0620 1213 1830 1.4E	1.5E 1.0F 1.4E					
3 W	0205 0856 1419 2117	0513 1122 1735 2354	1.9E 1.6F 1.9E 1.8F	18 Th	0250 0953 1452 2203	0606 1201 1821 1.6E	1.5E 1.1F 1.6E	3 Sa	0340 1046 1547 2244	0701 1252 1915 1.8E	1.9E 1.3F 1.8E	18 Su	0356 1113 1600 2305	0723 1306 1933 1.4E	1.5E 0.9F 1.4E					
4 Th	0302 1000 1512 2210	0619 1217 1836 1.9E	1.8E 1.5F 1.9E	19 F	0344 1050 1543 2252	0704 1250 1917 1.5E	1.5E 1.0F 1.5E	4 Su	0447 1150 1653 2346	0808 1357 2020 1.8E	1.9E 1.2F 1.8E	19 M	0456 1210 1703 2359	0820 1408 2028 1.4E	1.5E 0.9F 1.4E					
5 F	0403 1103 1611 2304	0724 1313 1937 1.9E	1.9F 1.9E 1.4F 1.9E	20 Sa	0441 1147 1640 2342	0803 1347 2011 1.5E	1.4F 1.5E 0.9F 1.5E	5 M	0552 1252 1759	0909 1522 2118	2.0E 1.2F 1.9E	20 Tu	0554 1304 1803	0911 1522 2118	1.4F 1.7E 1.5E					
6 Sa	0507 1206 1713	0826 1416 2037	1.9F 2.0E 1.3F 2.0E	21 Su	0538 1244 1739	0855 1459 2101	1.4F 1.6E 0.9F 1.5E	6 Tu	0647 0652 1350 1900	0351 1004 1635 2213	1.9F 2.1E 1.4F 2.0E	21 W	0652 1352 1856	0338 1000 2209	1.5F 1.8E 1.7E					
7 Su	0001 0609 1308 1814	0249 0922 1528 2131	2.0F 2.1E 1.3F 2.0E	22 M	0032 0631 1338 1834	0321 0944 1613 2150	1.5F 1.7E 1.0F 1.6E	7 W	0147 0746 1443 1956	0455 1059 1730 2309	2.0F 2.2E 1.6F 2.0E	22 Th	0144 0733 1436 1944	0431 1045 1704 2258	1.7F 1.9E 1.4F 1.8E					
8 M	0059 0707 1407 1912	0357 1018 1639 2226	2.1F 2.2E 1.4F 2.0E	23 Tu	0122 0719 1427 1924	0416 1032 1658 2238	1.6F 1.8E 1.1F 1.6E	8 Th	0242 0835 1530 2048	0542 1151 1814 1.7F	2.1F 2.2E 1.7F	23 F	0232 0817 1516 2030	0514 1133 1740 2346	1.9F 2.1E 1.6F 2.0E					
9 Tu	0157 0801 1501 2007	0457 1114 1733 2324	2.2F 2.3E 1.6F 2.1E	24 W	0211 0804 1512 2010	0501 1120 1733 2324	1.8F 1.9E 1.3F 1.7E	9 F	0333 0921 1614 2137	0625 1240 1853 1.8F	2.1E 2.1F 1.8F	24 Sa	0318 0900 1554 2115	0555 1217 1818 1.8F	2.0F 2.2E 1.8F					
10 W	0252 0852 1550 2101	0548 1209 1822 1.7F	2.3F 2.3E 1.7F	25 Th	0256 0847 1552 2055	0540 1205 1809 1.4F	1.9F 2.1E 1.4F	10 Sa	0421 1005 1655 2224	0705 1325 1931 1.8F	2.0F 2.3E 1.8F	25 Su	0402 0943 1630 2202	0637 1300 1859 2.0F	2.2E 2.3E 2.0F					
11 Th	0345 0941 1637 2153	0633 1300 1907 1.7F	2.1E 2.3F 2.4E 1.7F	26 F	0339 0929 1630 2140	0619 1250 1844 1.6F	1.9E 2.0F 2.2E 1.6F	11 Su	0506 1046 1735 2309	0741 1405 2007 1.8F	1.9F 2.2E 1.8F	26 M	0446 1026 1707 2249	0719 1343 1940 2.1F	2.1F 2.4E 2.1F					
12 F	0434 1028 1722 2245	0719 1348 1952 1.7F	2.1E 2.2F 2.4E 1.7F	27 Sa	0421 1011 1706 2226	0700 1332 1925 1.7F	2.0E 2.1F 2.3E 1.7F	12 M	0551 1127 1816 2354	0821 1444 2048 1.7F	2.1E 1.8F 2.2E 1.7F	27 Tu	0532 1110 1747 2338	0803 1424 2025 2.2F	2.4E 2.0F 2.4E					
13 Sa	0523 1114 1806 2335	0805 1432 2038 1.7F	2.1E 2.0F 2.3E 1.7F	28 Su	0504 1054 1742 2312	0741 1412 2006 1.8F	2.0F 2.3E 1.8F	13 Tu	0637 1206 1857	0903 1519 2129	1.6F 2.0E 1.7F	28 W	0621 1156 1830	0851 1507 2116	2.4E 2.3E 2.1F					
14 Su	0613 1157 1851	0848 1513 2126	1.9F 2.2E 1.6F	29 M	0548 1137 1821	0827 1451 2054	2.2E 2.0F 2.3E 1.9F	14 W	0727 1246 1941	0948 1558 2215	1.4F 1.9E 1.6F									
15 M	0024 0704 1240 1938	0330 0939 1554 2212	1.9E 1.7F 2.1E 1.6F	30 Tu	0000 0638 1220 1903	0310 0917 1532 2145	2.2E 1.9F 2.3E 1.9F	15 Th	0123 0821 1329 2029	0430 1033 1640 2300	1.7E 1.2F 1.7E 1.5F									
				31 W	0050 0734 1306 1951	0358 1008 1617 2234	2.1E 1.7F 2.2E 1.9F													

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1990

F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

MARCH

APRIL

Day	Slack Water			Day	Slack Water			Day	Slack Water			Day	Slack Water		
	Time	Current	Vel.		Time	Current	Vel.		Time	Current	Vel.		Time	Current	Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1	0029	0339	2.3E	16	0048	0359	1.8E	1	0159	0515	2.1E	16	0149	0505	1.7E
Th	0717	0944	1.7F	F	0750	1002	1.2F	Su	0907	1122	1.4F	M	0912	1112	1.0F
	1243	1551	2.2E		1255	1605	1.6E		1414	1731	1.8E		1403	1711	1.4E
	1921	2211	2.1F		1943	2224	1.6F		2108	2347	1.8F		2054	2331	1.4F
2	0122	0430	2.2E	17	0133	0443	1.7E	2	0259	0621	1.9E	17	0239	0602	1.6E
F	0819	1041	1.6F	Sa	0846	1049	1.1F	M	1010	1228	1.3F	Tu	1004	1207	1.1F
	1333	1644	2.0E		1340	1650	1.5E		1518	1842	1.7E		1458	1818	1.3E
	2020	2305	2.0F		2035	2313	1.5F		2215				2155		
3	0218	0532	2.0E	18	0221	0540	1.5E	3		0053	1.7F	18		0023	1.4F
Sa	0924	1136	1.4F	Su	0944	1140	1.0F	Tu	0404	0729	1.9E	W	0334	0704	1.6E
	1428	1747	1.8E		1430	1747	1.3E		1110	1343	1.3F		1053	1256	1.1F
	2124				2131				1627	1949	1.7E		1558	1923	1.4E
									2319				2254		
4		0004	1.9F	19		0002	1.4F	4		0211	1.6F	19		0116	1.4F
Su	0320	0640	1.9E	M	0315	0643	1.5E	W	0509	0830	1.9E	Th	0431	0758	1.7E
	1029	1238	1.3F		1039	1234	0.9F		1206	1459	1.4F		1140	1352	1.2F
	1531	1858	1.7E		1527	1855	1.3E		1735	2053	1.8E		1659	2020	1.6E
	2229				2229								2351		
5		0105	1.8F	20		0055	1.4F	5	0021	0324	1.6F	20		0213	1.4F
M	0426	0749	1.9E	Tu	0414	0743	1.5E	Th	0609	0923	2.0E	F	0527	0846	1.8E
	1132	1348	1.2F		1133	1329	0.9F		1259	1600	1.5F		1225	1447	1.4F
	1639	2007	1.7E		1630	1956	1.4E		1834	2147	1.9E		1756	2112	1.9E
	2333				2326										
6		0224	1.7F	21		0155	1.4F	6	0119	0426	1.7F	21	0047	0315	1.5F
Tu	0533	0852	1.9E	W	0513	0837	1.7E	F	0700	1012	2.0E	Sa	0620	0935	2.0E
	1232	1517	1.3F		1223	1430	1.0F		1348	1651	1.7F		1310	1544	1.7F
	1748	2106	1.8E		1731	2051	1.6E		1926	2238	2.0E		1848	2200	2.1E
7	0036	0343	1.8F	22	0022	0256	1.5F	7	0212	0511	1.7F	22	0140	0412	1.7F
W	0634	0947	2.0E	Th	0608	0925	1.8E	Sa	0745	1057	2.0E	Su	0709	1021	2.1E
	1322	1623	1.4F		1311	1534	1.2F		1433	1732	1.8F		1353	1635	2.0F
	1850	2203	1.9E		1827	2140	1.8E		2011	2323	2.0E		1938	2251	2.3E
8	0135	0444	1.9F	23	0116	0354	1.6F	8	0301	0552	1.7F	23	0232	0500	1.8F
Th	0727	1039	2.1E	F	0658	1011	2.0E	Su	0826	1143	2.0E	M	0756	1108	2.2E
	1419	1714	1.6F		1355	1623	1.5F		1514	1810	1.9F		1437	1720	2.2F
	1943	2256	2.0E		1917	2229	2.0E		2053				2026	2342	2.4E
9	0230	0533	1.9F	24	0207	0442	1.8F	9		0009	2.1E	24	0322	0546	1.9F
F	0814	1127	2.1E	Sa	0744	1057	2.1E	M	0346	0625	1.6F	Tu	0842	1155	2.3E
	1504	1757	1.8F		1436	1708	1.8F		0906	1224	2.0E		1521	1806	2.4F
	2032	2346	2.1E		2004	2317	2.2E		1553	1837	1.9F		2115		
									2134						
10	0319	0611	1.9F	25	0255	0529	2.0F	10		0053	2.1E	25		0034	2.6E
Sa	0857	1215	2.1E	Su	0829	1142	2.2E	Tu	0428	0654	1.6F	W	0411	0633	1.9F
	1546	1834	1.8F		1515	1749	2.1F		0944	1303	1.9E		0930	1246	2.3E
	2117				2050				1630	1904	1.9F		1606	1851	2.5F
									2214				2206		
11		0035	2.1E	26		0008	2.4E	11		0133	2.1E	26		0124	2.6E
Su	0404	0648	1.9F	M	0342	0611	2.0F	W	0510	0724	1.5F	Th	0501	0720	1.9F
	0937	1256	2.1E		0913	1229	2.3E		1023	1341	1.9E		1020	1337	2.3E
	1625	1905	1.9F		1554	1830	2.3F		1706	1938	1.8F		1653	1940	2.5F
	2200				2138				2254				2258		
12		0116	2.1E	27		0057	2.5E	12		0212	2.0E	27		0215	2.6E
M	0447	0720	1.8F	Tu	0428	0654	2.1F	Th	0552	0803	1.4F	F	0552	0812	1.8F
	1016	1334	2.1E		0957	1315	2.4E		1103	1419	1.8E		1112	1426	2.3E
	1702	1935	1.9F		1634	1915	2.4F		1742	2019	1.8F		1744	2033	2.3F
	2242				2227				2336				2351		
13		0159	2.1E	28		0145	2.6E	13		0252	2.0E	28		0306	2.5E
Tu	0530	0753	1.6F	W	0516	0741	2.0F	F	0637	0846	1.2F	Sa	0648	0907	1.6F
	1054	1412	2.0E		1044	1400	2.4E		1144	1457	1.7E		1206	1516	2.1E
	1739	2010	1.8F		1717	2002	2.4F		1820	2102	1.7F		1841	2130	2.2F
	2324				2317										
14		0238	2.0E	29		0231	2.6E	14	0018	0331	1.9E	29	0045	0358	2.3E
W	0613	0830	1.5F	Th	0606	0830	1.9F	Sa	0725	0932	1.1F	Su	0747	1009	1.5F
	1133	1449	1.9E		1133	1445	2.3E		1228	1534	1.6E		1303	1611	2.0E
	1817	2051	1.7F		1804	2054	2.3F		1903	2151	1.6F		1944	2230	2.0F
15	0005	0316	1.9E	30	0009	0323	2.5E	15	0102	0416	1.8E	30	0140	0456	2.1E
Th	0659	0913	1.3F	F	0702	0923	1.7F	Su	0818	1023	1.1F	M	0847	1112	1.5F
	1213	1526	1.8E		1223	1534	2.2E		1314	1617	1.5E		1401	1715	1.8E
	1857	2135	1.6F		1858	2149	2.2F		1955	2240	1.5F		2051	2332	1.8F
				31	0103	0414	2.3E								
				Sa	0804	1022	1.5F								
					1317	1627	2.0E								
					2001	2246	2.0F								

Time meridian 75° W. 0000 is midnight, 1200 is noon.

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1990

85

F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

MAY								JUNE												
Day	Slack Water Time			Maximum Current Time Vel.			Day	Slack Water Time			Maximum Current Time Vel.			Day	Slack Water Time			Maximum Current Time Vel.		
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots			
1 Tu	0237 0946 1504 2157	0557 1218 1821	2.0E 1.4F 1.7E	16 W	0207 0926 1432 2123	0526 1135 1745 2354	1.7E 1.2F 1.5E 1.5F	1 F	0357 1100 1644 2333	0108 0725 1348 2002	1.4F 1.8E 1.6F 1.7E	16 Sa	0314 1014 1558 2254	0017 0638 1246 1917	1.5F 1.8E 1.7F 1.8E					
2 W	0336 1042 1609 2300	0035 0702 1323 1930	1.6F 1.9E 1.4F 1.7E	17 Th	0257 1011 1529 2223	0623 1224 1851	1.7E 1.3F 1.5E	2 Sa	0452 1149 1741	0211 0818 1449 2056	1.3F 1.8E 1.6F 1.8E	17 Su	0408 1102 1658 2354	0108 0735 1340 2016	1.4F 1.9E 1.8E 1.9E					
3 Th	0436 1135 1714	0144 0803 1430 2031	1.5F 1.9E 1.5F 1.8E	18 F	0350 1056 1628 2321	0045 0718 1317 1949	1.4F 1.8E 1.5F 1.7E	3 Su	0029 0545 1236 1832	0318 0905 1546 2143	1.2F 1.8E 1.7F 1.8E	18 M	0506 1152 1757	0207 0827 1437 2110	1.4F 2.0E 2.0F 2.1E					
4 F	0000 0534 1225 1812	0256 0853 1530 2122	1.4F 1.9E 1.6F 1.9E	19 Sa	0446 1141 1726	0140 0811 1411 2043	1.4F 1.9E 1.7F 1.9E	4 M	0124 0634 1323 1918	0414 0950 1629 2228	1.2F 1.8E 1.7F 1.9E	19 Tu	0053 0503 1245 1853	0308 0921 1536 2206	1.4F 2.1E 2.1F 2.2E					
5 Sa	0057 0625 1313 1902	0357 0940 1623 2213	1.4F 1.9E 1.7F 1.9E	20 Su	0018 0541 1227 1821	0236 0859 1509 2134	1.5F 2.0E 1.9F 2.1E	5 Tu	0216 0719 1407 2001	0501 1032 1710 2314	1.2F 1.7E 1.8F 1.9E	20 W	0152 0659 1340 1947	0412 1012 1635 2301	1.5F 2.1E 2.3F 2.3E					
6 Su	0150 0711 1358 1946	0448 1023 1706 2257	1.5F 1.9E 1.8F 2.0E	21 M	0115 0634 1315 1914	0337 0947 1603 2225	1.5F 2.1E 2.1F 2.3E	6 W	0304 0802 1450 2042	0540 1117 1743	1.2F 1.7E 1.8F	21 Th	0248 0753 1436 2039	0508 1108 1727 2355	1.6F 2.2E 2.4F 2.4E					
7 M	0240 0753 1441 2028	0527 1104 1741 2340	1.4F 1.9E 1.9F 2.0E	22 Tu	0211 0725 1404 2005	0434 1035 1654 2320	1.6F 2.2E 2.3F 2.4E	7 Th	0348 0845 1531 2122	0002 0611 1202 1813	1.9E 1.2F 1.7E 1.9F	22 F	0340 0847 1530 2131	0602 1205 1818	1.7F 2.2E 2.4F					
8 Tu	0326 0833 1521 2108	0603 1148 1810	1.4F 1.8E 1.9F	23 W	0304 0815 1454 2056	0525 1128 1743	1.7F 2.2E 2.5F	8 F	0430 0928 1610 2203	0044 0642 1248 1846	2.0E 1.2F 1.7E 1.9F	23 Sa	0430 0942 1622 2223	0052 0651 1301 1907	2.5E 1.7F 2.2E 2.4F					
9 W	0409 0913 1559 2147	0027 0630 1231 1838	2.0E 1.4F 1.8E 1.9F	24 Th	0356 0906 1544 2143	0014 0615 1223 1832	2.5E 1.8F 2.3E 2.5F	9 Sa	0512 1012 1649 2245	0127 0718 1331 1926	2.0E 1.2F 1.7E 1.8F	24 Su	0519 1038 1715 2314	0143 0741 1354 1959	2.5E 1.7F 2.2E 2.2F					
10 Th	0451 0954 1636 2228	0110 0702 1314 1911	2.0E 1.3F 1.7E 1.9F	25 F	0446 0959 1635 2241	0108 0703 1317 1921	2.6E 1.8F 2.3E 2.5F	10 Su	0553 1057 1728 2328	0209 0759 1412 2009	2.0E 1.2F 1.7E 1.8F	25 M	0609 1133 1810	0232 0836 1447 2054	2.5E 1.7F 2.2E 2.1F					
11 F	0533 1036 1712 2309	0150 0739 1353 1950	2.0E 1.3F 1.7E 1.8F	26 Sa	0537 1054 1728 2334	0200 0756 1410 2015	2.6E 1.7F 2.2E 2.3F	11 M	0634 1142 1811	0248 0844 1453 2056	2.0E 1.2F 1.7E 1.7F	26 Tu	0004 0659 1228 1907	0319 0935 1536 2151	2.4E 1.9E 2.0E 1.9F					
12 Sa	0616 1120 1750 2352	0231 0820 1433 2035	2.0E 1.2F 1.6E 1.7F	27 Su	0630 1151 1825	0250 0854 1503 2110	2.5E 1.6F 2.1E 2.1F	12 Tu	0010 0717 1229 1859	0326 0930 1536 2145	2.0E 1.3F 1.7E 1.6F	27 W	0052 0751 1321 2006	0405 1031 1627 2244	2.2E 1.7F 1.9E 1.7F					
13 Su	0702 1205 1833	0308 0907 1514 2122	2.0E 1.1F 1.6E 1.6F	28 M	0026 0726 1247 1927	0342 0956 1556 2214	2.4E 1.6F 2.0E 1.9F	13 W	0053 0800 1316 1955	0406 1021 1621 2236	2.0E 1.4F 1.7E 1.6F	28 Th	0139 0842 1415 2106	0456 1122 1726 2335	2.0E 1.6F 1.7E 1.5F					
14 M	0035 0749 1251 1924	0351 0958 1555 2214	1.9E 1.1F 1.5E 1.6F	29 Tu	0118 0822 1344 2031	0433 1100 1653 2313	2.2E 1.6F 1.8E 1.7F	14 Th	0137 0844 1406 2054	0451 1106 1713 2325	1.9E 1.5F 1.6E 1.5F	29 F	0226 0933 1510 2205	0547 1212 1826	1.9E 1.6F 1.6E					
15 Tu	0120 0838 1340 2022	0433 1047 1644 2302	1.8E 1.2F 1.5E 1.5F	30 W	0210 0917 1443 2134	0528 1157 1756	2.0E 1.6F 1.7E	15 F	0223 0929 1500 2155	0544 1157 1814	1.8E 1.6F 1.7E	30 Sa	0315 1022 1606 2302	0026 0643 1303 1926	1.3F 1.8E 1.6F 1.6E					
				31 Th	0303 1010 1543 2235	0010 0629 1252 1901	1.6F 1.9E 1.6F 1.7E													

Time meridian 75° W. 0000 is midnight, 1200 is noon.

best copy available

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1990

F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

JULY

AUGUST

Slack Water				Maximum Current				Slack Water				Maximum Current				Slack Water				Maximum Current			
Time				Vel.				Time				Vel.				Time				Vel.			
Day				Day				Day				Day				Day				Day			
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 Su	0408	0120	1.1F	16 M	0337	0043	1.4F	1 W	0024	0243	0.9F	16 Th	0018	0233	1.2F	2 Su	0408	0120	1.1F	17 Tu	0438	0803	1.9E
	1111	1355	1.5F		1032	0704	1.9E		0520	0845	1.5E		0525	0846	1.9E		1111	1355	1.5F		1127	1412	1.9F
	1703	2021	1.6E		1633	1311	1.9F		1215	1504	1.5F		1215	1505	1.9F		1703	2021	1.6E		1736	2052	2.0E
	2359				2334	1952	1.9E		1813	2127	1.7E		1820	2133	2.1E		2359						
2 M	0502	0224	1.0F	17 Tu	0438	0141	1.3F	2 Th	0118	0400	1.0F	17 F	0117	0354	1.3F	3 Su	0502	0224	1.0F	18 W	0540	0859	2.0E
	1159	1457	1.5F		1127	0803	1.9E		0616	0931	1.5E		0629	0944	2.0E		1159	1457	1.5F		1226	1515	2.0F
	1758	2111	1.7E		1736	1412	1.9F		1306	1607	1.6F		1316	1619	2.0E		1758	2111	1.7E		1835	2147	2.1E
						2052	2.0E		1902	2214	1.8E		1916	2228	2.2E								
3 Tu	0555	0337	1.0F	18 W	0540	0246	1.3F	3 F	0209	0449	1.1F	18 Sa	0212	0455	1.5F	4 W	0555	0337	1.0F	19 Th	0641	0956	2.0E
	1248	1553	1.6F		1226	0859	2.0E		0707	1021	1.6E		0727	1041	2.1E		1248	1553	1.6F		1326	1623	2.1F
	1847	2159	1.8E		1835	2147	2.1E		1355	1652	1.7F		1414	1715	2.1F		1847	2159	1.8E		1931	2243	2.2E
									1947	2303	1.9E		2008	2320	2.2E								
4 W	0646	0432	1.0F	19 Th	0641	0357	1.4F	4 Sa	0254	0526	1.2F	19 Su	0302	0546	1.7F	5 M	0646	0432	1.0F	20 F	0738	1052	2.1E
	1336	1642	1.7F		1326	0956	2.0E		0755	1108	1.7E		0821	1136	2.1E		1336	1642	1.7F		1424	1719	2.3E
	1932	2245	1.8E		1931	1623	2.1F		1442	1730	1.8F		1508	1802	2.1F		1932	2245	1.8E		2024	2338	2.3E
						2243	2.2E		2030	2346	2.0E		2056										
5 Th	0734	0517	1.1F	20 F	0738	0501	1.5F	5 Su	0335	0559	1.4F	20 M	0347	0627	1.8F	6 M	0734	0517	1.1F	21 Sa	0833	1151	2.1E
	1422	1717	1.8F		1424	0738	2.1E		0839	1155	1.8E		0912	1230	2.2E		1422	1717	1.8F		1519	1810	2.3F
	2015	2330	1.9E		2024	1424	2.3E		1526	1804	1.9F		1558	1843	2.1F		2015	2330	1.9E		2115		
						2338	2.3E		2111				2141										
6 F	0819	0555	1.2F	21 Sa	0833	0553	1.7F	6 M	0413	0031	2.1F	21 Tu	0430	0708	1.9F	7 M	0819	0555	1.2F	22 W	0512	0746	1.9F
	1506	1752	1.8F		1519	1151	2.1E		0923	1241	1.9E		1001	1317	2.2E		1506	1752	1.8F		1545	1922	2.0F
	2057				2115	1810	2.3F		1607	1841	2.0F		1645	1922	2.0F		2057				2225		
									2153				2225										
7 Sa	0406	0017	2.0E	22 Su	0411	0033	2.4E	7 Tu	0449	0114	2.2E	22 W	0512	0746	1.9F	8 M	0406	0017	2.0E	23 Th	0554	0827	1.8F
	0904	0622	1.3F		0927	0640	1.8F		1007	1327	2.0E		1048	1404	2.2E		0904	0622	1.3F		1088	1404	2.2E
	1548	1827	1.9F		1611	1856	2.3F		1649	1922	2.0F		1732	2002	1.8F		1548	1827	1.9F		1732	2002	1.8F
	2139				2204				2234				2307				2139				2307		
8 Su	0446	0102	2.0E	23 M	0457	0124	2.4E	8 W	0524	0155	2.2E	23 Th	0554	0827	1.8F	9 M	0446	0102	2.0E	24 F	0636	0913	1.7F
	0948	0656	1.3F		1020	0727	1.8F		1052	0745	1.7F		1135	1446	2.1E		0948	0656	1.3F		1220	1530	2.0E
	1628	1306	1.7E		1701	1338	2.2E		1731	1408	2.1E		1819	2045	2.1E		1628	1306	1.7E		1909	2132	1.4F
	2220	1905	1.9F		2252	1940	2.1F		2315	2005	1.9F		2349				2220	1905	1.9F				
9 M	0524	0143	2.1E	24 Tu	0542	0209	2.4E	9 Th	0600	0232	2.2E	24 F	0636	0913	1.7F	10 Tu	0501	0157	1.5F	25 W	0721	0957	1.7F
	1033	0733	1.4F		1113	0815	1.8F		1138	0832	1.8F		1220	1530	2.0E		1033	0733	1.4F		1306	1614	1.8E
	1709	1350	1.8E		1752	1427	2.2E		1817	1451	2.1E		1909	2132	1.4F		1709	1350	1.8E		2003	2220	1.3F
	2302	1946	1.9F		2337	2029	2.0F		2357	2052	1.8F						2302	1946	1.9F				
10 Tu	0601	0221	2.1E	25 W	0628	0252	2.3E	10 F	0638	0309	2.2E	25 Sa	0721	0957	1.7F	11 W	0640	0240	2.1E	26 Th	0810	1043	1.6F
	1118	0816	1.5F		1203	0906	1.8F		1226	0920	1.9F		1306	1614	1.8E		1118	0816	1.5F		1353	1705	1.6E
	1751	1431	1.9E		1843	1513	2.1E		1908	1534	2.1E		2003	2220	1.3F		1751	1431	1.9E		2101	2309	1.1F
	2344	2031	1.8F		2383	2119	1.8F			2143	1.7F						2344	2031	1.8F				
11 W	0640	0300	2.1E	26 Th	0715	0336	2.2E	11 Sa	0722	0350	2.1E	26 Su	0810	1043	1.6F	12 Th	0719	0339	2.1E	27 F	0803	1040	1.7F
	1204	0901	1.5F		1252	0955	1.7F		1316	1009	1.9F		1353	1705	1.6E		1204	0901	1.5F		1431	1649	1.8E
	1837	1510	1.9E		1938	1601	1.9E		2007	1624	2.0E		2101	2309	1.1F		1837	1510	1.9E		2208	2208	1.7F
		2119	1.7F			2209	1.6F			2234	1.6F												
12 Th	0926	0339	2.1E	27 F	0803	0420	2.0E	12 Su	0813	0437	2.0E	27 M	0901	1132	1.5F	13 F	0802	0340	2.0E	28 W	0853	1129	1.6F
	0719	0948	1.6F		1341	0449	1.8E		1409	1100	1.9F		1443	1801	1.5E		0719	0948	1.6F		1431	1744	1.6E
	1251	1555	1.9E		2035	2257	1.4F		2110	2326	1.4F		2159				1251	1555	1.9E		2133	2347	1.2F
	1930	2208	1.7F														1930	2208	1.7F				
13 F	0108	0420	2.0E	28 Sa	0149	0505	1.8E	13 M	0217	0534	1.9E	28 Tu	0247	0000	1.0F	14 W	0153	0506	1.9E	29 Th	0345	0716	1.4E
	0802	1037	1.7F		0853	1129	1.6F		0910	1155	1.9F		0955	1222	1.4F		0802	1037	1.7F		1049	1315	1.4F
	1340	1646	1.9E		1431	1744	1.6E		1508	1826	1.9E		1538	1904	1.5E		1340	1646	1.9E		1637	2003	1.5E
	2029	2259	1.6F		2133	2347	1.2F		2214				2256				2029	2259	1.6F		2351		
14 Sa	0153	0506	1.9E	29 Su	0235	0558	1.6E	14 Tu	0314	0640	1.8E	29 W	0345	0716	1.4E	15 Su	0242	0601	1.9E	30 M	0325	0656	1.5E
	0848	1125	1.8F		0943	1215	1.5F		1011	1250	1.9F		1049	1315	1.4F		0848	1125	1.8F		1033	1304	1.5F
	1433	1745	1.8E		1525	1845	1.5E		1611	1934	1.9E		1637	2003	1.5E		1433	1745	1.8E		1621	1942	1.5E
	2130	2350	1.5F		2230				2317				2351				2130	2350	1.5F				
15 Su	0242	0601	1.9E	30 M	0325	0033	1.0F	15 W	0418	0745	1.8E	30 Th	0447	0811	1.4E	16 M	0242	0601	1.9E	31 Tu	0421	0751	1.5E
	0938	1218	1.8F		1033	1304	1.5F		1112	1352	1.9F		1143	1417	1.4F		0938	1218	1.8F		1124	1358	1.4F
	1531	1851	1.8E		1621	1942	1.5E		1717	2035	2.0E		1735	2056	1.6E		1531	1851	1.8E		1719	2038	1.6E
	2232				2327												2232						

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1990

87

F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

SEPTEMBER

OCTOBER

Day	Slack Water Time	Maximum Current Time	Current Vel.	Day	Slack Water Time	Maximum Current Time	Current Vel.	Day	Slack Water Time	Maximum Current Time	Current Vel.	Day	Slack Water Time	Maximum Current Time	Current Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 Sa	0133 0640 1328 1915	0410 0954 1618 2229	1.1F 1.6E 1.6F 1.9E	16 Su	0148 0716 1403 1947	0445 1028 1704 2259	1.7F 2.1E 1.9F 2.2E	1 M	0135 0659 1349 1924	0407 1010 1625 2237	1.5F 1.9E 1.7F 2.0E	16 Tu	0207 0749 1439 2004	0509 1100 1733 2317	1.9F 2.1E 1.7F 2.0E
2 Su	0217 0728 1417 1959	0452 1040 1701 2313	1.3F 1.8E 1.8F 2.0E	17 M	0236 0807 1455 2032	0530 1120 1749 2346	1.8F 2.1E 2.0F 2.2E	2 Tu	0215 0745 1437 2007	0451 1057 1708 2320	1.7F 2.1E 1.8F 2.1E	17 W	0250 0833 1526 2045	0548 1149 1808 2359	2.0F 2.1E 1.7F 2.0E
3 M	0258 0813 1502 2040	0527 1126 1739 2357	1.5F 1.9E 1.9F 2.1E	18 Tu	0320 0854 1543 2114	0609 1210 1828 2346	1.9F 2.2E 1.9F 2.2E	3 W	0254 0830 1523 2049	0527 1146 1751 2320	2.0F 2.3E 1.9F 2.1E	18 Th	0331 0915 1610 2124	0618 1232 1841 2359	2.0F 2.1E 1.6F 2.1E
4 Tu	0335 0856 1545 2122	0601 1215 1816 2357	1.8F 2.1E 2.0F 2.1E	19 W	0401 0938 1628 2155	0631 1256 1902 2346	2.2E 2.0F 2.2E 2.1E	4 Th	0332 0915 1608 2132	0608 1234 1833 2307	2.2F 2.4E 2.0F 2.1E	19 F	0410 0956 1653 2204	0649 1316 1909 2359	2.0F 2.1E 1.5F 2.1E
5 W	0410 0940 1628 2203	0636 1300 1857 2357	1.9F 2.2E 2.0F 2.1E	20 Th	0441 1022 1712 2235	0715 1340 1938 2346	2.0F 2.2E 1.7F 2.1E	5 F	0410 1001 1653 2217	0650 1320 1916 2307	2.3F 2.5E 1.9F 2.1E	20 Sa	0447 1037 1736 2245	0720 1356 1946 2359	1.9F 2.1E 1.4F 2.1E
6 Th	0446 1026 1711 2246	0717 1344 1940 2357	2.3E 2.0F 1.9F 2.1E	21 F	0519 1105 1756 2315	0753 1421 2015 2346	1.9F 2.1E 1.5F 2.1E	6 Sa	0450 1050 1742 2305	0735 1408 2003 2305	2.3F 2.5E 1.8F 2.1E	21 Su	0524 1119 1820 2327	0800 1437 2029 2359	1.8F 2.0E 1.2F 2.1E
7 F	0522 1113 1758 2330	0802 1429 2025 2357	2.3E 2.1F 1.8F 2.1E	22 Sa	0558 1148 1843 2357	0832 1501 2057 2346	2.0E 2.0F 1.3F 2.1E	7 Su	0534 1141 1835 2355	0824 1457 2056 2305	2.3E 2.3F 2.4E 2.1E	22 M	0604 1201 1909 2316	0845 1516 2116 2359	1.7F 1.9E 1.1F 2.1E
8 Sa	0603 1202 1850	0849 1514 2117	2.1F 2.3E 1.7F	23 Su	0640 1232 1934	0917 1542 2145	1.7F 1.8E 1.2F	8 M	0625 1234 1934	0920 1545 2151	2.2F 2.3E 1.5F	23 Tu	0648 1245 2001	0932 1601 2204	1.6F 1.8E 1.1F
9 Su	0616 0650 1254 1949	0323 0942 1604 2212	2.2E 2.1F 2.2E 1.5F	24 M	0640 0726 1317 2030	0350 1005 1627 2236	1.6E 1.5F 1.7E 1.1F	9 Tu	0648 0726 1330 2037	0358 1017 1642 2253	2.0E 2.0F 2.1E 1.4F	24 W	0659 0740 1331 2055	0404 1021 1646 2259	1.4E 1.5F 1.7E 1.0F
10 M	0705 0746 1348 2054	0412 1037 1700 2309	2.0E 2.0F 2.0E 1.4F	25 Tu	0725 0820 1405 2127	0433 1056 1721 2325	1.5E 1.5F 1.6E 1.0F	10 W	0745 0834 1428 2140	0457 1118 1747 2356	1.8E 1.9F 2.0E 1.4F	25 Th	0749 0839 1420 2147	0457 1112 1743 2350	1.3E 1.4F 1.6E 1.0F
11 Tu	0759 0849 1448 2158	0512 1133 1806 2315	1.8E 1.9F 1.9E 1.5F	26 W	0816 0917 1457 2223	0532 1147 1823 2346	1.3E 1.4F 1.5E 1.0F	11 Th	0847 0943 1531 2239	0607 1219 1855 2305	1.7E 1.8F 1.9E 1.4F	26 F	0849 0940 1513 2236	0601 1203 1843 2359	1.3E 1.4F 1.6E 1.0F
12 W	0859 0956 1552 2300	0623 1234 1916 2357	1.3F 1.7E 1.8F 1.9E	27 Th	0913 1015 1554 2315	0637 1238 1926 2346	0.9F 1.3E 1.3F 1.5E	12 F	0955 1049 1636 2336	0102 0719 1328 2001	1.4F 1.7E 1.7F 1.9E	27 Sa	0941 1038 1609 2322	0639 1259 1940 2359	1.1F 1.4E 1.3F 1.7E
13 Th	0906 1102 1659	0732 1339 2021	1.2F 1.8E 1.7F 1.9E	28 F	0915 1112 1653	0741 1335 2020	1.4E 1.3F 1.6E	13 Sa	0904 1152 1738	0824 1449 2056	1.8E 1.6F 2.0E	28 Su	0941 1134 1705	0803 1354 2029	1.5E 1.4F 1.8E
14 F	0916 1205 1802	0230 0837 1502 2116	1.3F 1.8E 1.8F 2.0E	29 M	0905 0916 1206 1748	0217 0837 1433 2109	1.0F 1.5E 1.4F 1.8E	14 Tu	0929 1007 1252 1833	0327 0922 1554 2147	1.6F 2.0E 1.7F 2.0E	29 W	0906 0957 1228 1757	0230 0853 1453 2114	1.4F 1.8E 1.4F 1.9E
15 Sa	0956 0620 1306 1858	0347 0934 1613 2207	1.4F 2.0E 1.8F 2.1E	30 Su	0951 0611 1259 1838	0315 0925 1536 2151	1.2F 1.7E 1.5F 1.9E	15 M	0120 0701 1347 1921	0426 1013 1648 2232	1.8F 2.0E 1.7F 2.1E	30 Tu	0949 0629 1321 1846	0321 0943 1548 2157	1.6F 2.0E 1.5F 2.0E
												31 W	0131 0717 1412 1932	0412 1031 1639 2244	1.9F 2.2E 1.7F 2.1E

Time meridian 75° W. 0000 is midnight, 1200 is noon.

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1990
 F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

NOVEMBER

DECEMBER

Day	Slack Water Time			Day	Maximum Current Time Vel.			Day	Slack Water Time			Day	Maximum Current Time Vel.		
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 Th	0214 0804 1501 2018	0457 1120 1723 2330	2.1F 2.3E 1.8F 2.2E	16 F	0302 0852 1552 2056	0555 1210 1822	1.9F 2.0E 1.4F	1 Sa	0228 0831 1532 2040	0520 1147 1749 2356	2.4F 2.5E 1.7F 2.2E	16 Su	0317 0908 1615 2113	0605 1228 1837	1.9F 2.0E 1.3F
2 F	0256 0851 1549 2104	0542 1209 1809	2.4F 2.5E 1.9F	17 Sa	0342 0932 1635 2137	0625 1253 1853	1.9F 2.0E 1.3F	2 Su	0318 0922 1621 2132	0609 1241 1837	2.5F 2.5E 1.8F	17 M	0357 0949 1656 2156	0637 1311 1908	1.7E 1.9F 2.0E 1.3F
3 Sa	0340 0940 1637 2152	0627 1300 1855	2.5F 2.6E 1.9F	18 Su	0420 1012 1717 2219	0656 1334 1924	1.9F 2.0E 1.3F	3 M	0408 1014 1711 2226	0649 1333 1928	2.3E 2.5F 2.6E 1.8F	18 Tu	0436 1029 1736 2241	0712 1352 1944	1.7E 1.9F 2.1E 1.3F
4 Su	0425 1031 1726 2243	0713 1350 1944	2.3E 2.5F 2.6E 1.8F	19 M	0458 1053 1759 2303	0733 1414 2003	1.7E 1.8F 2.0E 1.2F	4 Tu	0500 1106 1802 2322	0747 1424 2021	2.4F 2.6E 1.7F	19 W	0515 1110 1816 2325	0752 1431 2025	1.8F 2.1E 1.3F
5 M	0514 1123 1819 2337	0804 1441 2038	2.4F 2.5E 1.7F	20 Tu	0536 1135 1844 2348	0816 1455 2050	1.7F 2.0E 1.2F	5 W	0555 1159 1855	0841 1513 2120	2.2E 2.5E 1.7F	20 Th	0556 1152 1857	0839 1508 2110	1.7F 2.0E 1.3F
6 Tu	0608 1217 1916	0250 1532 2135	2.2E 2.2F 2.4E 1.6F	21 W	0618 1217 1930	0259 0903 1534 2139	1.6E 1.6F 1.9E 1.1F	6 Th	0619 1251 1951	0329 0940 1604 2225	2.1E 2.0F 2.3E 1.7F	21 F	0641 1233 1939	0317 0924 2158	1.7E 1.6F 2.0E 1.3F
7 W	0710 1311 2016	0342 0958 1625 2240	2.0E 2.0F 2.2E 1.5F	22 Th	0707 1301 2019	0951 1617 2228	1.5F 1.8E 1.1F	7 F	0716 1343 2047	0424 1043 1659 2324	2.0E 1.9F 2.1E 1.6F	22 Sa	0732 1315 2021	0358 1013 2243	1.6E 1.5F 1.9E 1.4F
8 Th	0818 1407 2116	0443 1100 1725 2344	1.9E 1.9F 2.1E 1.5F	23 F	0804 1347 2106	0427 1042 1705 2317	1.4E 1.5F 1.7E 1.2F	8 Sa	0814 1435 2141	0525 1141 1758	1.8E 1.7F 2.0E	23 Su	0829 1359 2105	0447 1102 2332	1.6E 1.5F 1.8E 1.5F
9 F	0926 1505 2213	0548 1203 1829	1.8E 1.7F 2.0E	24 Sa	0926 1434 2152	0522 1133 1800	1.4E 1.4F 1.7E	9 Su	0935 1530 2234	0632 1240 1857	1.6F 1.7E 1.5F 1.9E	24 M	0929 1446 2150	0545 1151 1806	1.6E 1.4F 1.8E
10 Sa	1031 1606 2307	0648 1309 1932	1.5F 1.7E 1.6F 1.9E	25 Su	1003 1526 2236	0625 1224 1855	1.5E 1.4F 1.7E	10 M	1017 1626 2325	0737 1342 1955	1.6F 1.7E 1.3F 1.8E	25 Tu	1029 1538 2236	0648 1243 1904	1.7E 1.3F 1.8E
11 Su	1133 1705 2358	0804 1423 2029	1.8E 1.5F 1.9E	26 M	1101 1620 2320	0854 1315 1947	1.4F 1.6E 1.3F 1.8E	11 Tu	1118 1722	0824 1453 2044	1.6F 1.8E 1.2F 1.8E	26 W	1129 1635 2325	0829 1338 2001	1.8E 1.3F 1.8E
12 M	1232 1801	0901 1530 2117	1.6F 1.9E 1.4F 1.9E	27 Tu	1257 1815	0923 1411 2037	1.8E 1.3F 1.9E	12 W	1304 1814	0924 1557 2131	1.8E 1.2F 1.8E	27 Th	1228 1734	0845 1439 2053	2.0E 1.3F 1.9E
13 Tu	1328 1850	0952 1623 2202	2.0E 1.5F 1.9E	28 W	1358 1809	0911 1510 2125	2.0E 1.4F 2.0E	13 Th	1358 1902	1013 1648 2216	1.9E 1.2F 1.7E	28 F	1327 1832	0941 1540 2147	2.1E 1.4F 2.0E
14 W	1420 1934	1039 1710 2247	2.0E 1.5F 1.9E	29 Th	1447 1900	1002 1609 2210	2.2E 1.5F 2.1E	14 F	1447 1947	1058 1729 2301	1.9E 1.2F 1.7E	29 Sa	1423 1927	1642 2242	1.5F 2.1E
15 Th	1508 2015	1125 1749 2330	2.0E 1.4F 1.9E	30 F	1441 1950	1055 1700 2301	2.3E 1.6F 2.2E	15 Sa	1533 2030	1145 1806 2346	1.9E 1.3F 1.7E	30 Su	1515 2021	1737 2338	1.7F 2.2E
												31 M	1605 2116	1826 2553	1.8F 2.4F

Time meridian 75° W. 0000 is midnight, 1200 is noon.

F-Flood, Dir. 327° True E-Ebb, Dir. 147° True

JANUARY

FEBRUARY

Slack Water Time				Maximum Current Time Vel.				Slack Water Time				Maximum Current Time Vel.			
Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1	0021	0342	1.2E	16	0113	0431	1.1E	1	0142	0518	1.4E	16	0156	0518	1.0E
M	0620	0925	1.5F	Tu	0719	1023	1.2F	Th	0807	1058	1.4F	F	0817	1118	0.9F
	1237	1612	1.4E		1327	1656	1.2E		1356	1729	1.3E		1406	1717	0.9E
	1905	2159	1.4F		1953	2255	1.2F		2012	2320	1.6F		2002	2331	1.2F
2	0109	0435	1.2E	17	0157	0518	1.0E	2	0239	0618	1.4E	17	0243	0606	1.0E
Tu	0716	1017	1.4F	W	0807	1111	1.1F	F	0912	1158	1.2F	Sa	0911	1208	0.8F
	1323	1659	1.4E		1407	1735	1.0E		1454	1827	1.2E		1454	1802	0.8E
	1949	2249	1.4F		2025	2338	1.2F		2108				2047		
3	0202	0534	1.2E	18	0244	0605	1.0E	3		0018	1.6F	18		0017	1.1F
W	0816	1114	1.3F	Th	0900	1201	0.9F	Sa	0342	0722	1.4E	Su	0336	0702	1.0E
	1414	1751	1.3E		1451	1815	0.9E		1022	1301	1.2F		1012	1300	0.7F
	2038	2344	1.5F		2100				1600	1930	1.2E		1549	1857	0.8E
4	0300	0634	1.3E	19		0022	1.1F	4		0118	1.6F	19		0108	1.1F
Th	0922	1214	1.3F	F	0334	0655	1.0E	Su	0448	0829	1.4E	M	0433	0804	1.0E
	1512	1846	1.3E		1000	1252	0.8F		1132	1407	1.1F		1113	1358	0.7F
	2131				1541	1858	0.9E		1707	2036	1.1E		1648	2004	0.8E
5		0039	1.6F	20		0109	1.1F	5		0223	1.6F	20		0206	1.1F
F	0401	0737	1.3E	Sa	0426	0750	1.0E	M	0553	0934	1.5E	Tu	0531	0907	1.0E
	1032	1316	1.2F		1102	1347	0.7F		1238	1513	1.2F		1212	1457	0.7F
	1616	1947	1.2E		1635	1950	0.8E		1814	2140	1.2E		1748	2110	0.8E
	2229				2228								2336		
6		0138	1.6F	21		0158	1.1F	6	0018	0327	1.6F	21		0305	1.2F
Sa	0502	0843	1.4E	Su	0518	0848	1.0E	Tu	0659	1034	1.5E	W	0629	1003	1.2E
	1141	1421	1.2F		1201	1445	0.7F		1340	1614	1.3F		1307	1551	0.8F
	1720	2051	1.2E		1731	2048	0.8E		1920	2239	1.3E		1846	2208	1.0E
	2328				2318										
7		0239	1.7F	22		0251	1.2F	7	0120	0426	1.6F	22	0036	0359	1.3F
Su	0604	0946	1.5E	M	0611	0944	1.1E	W	0759	1129	1.6E	Th	0724	1054	1.3E
	1248	1526	1.3F		1257	1540	0.8F		1437	1710	1.3F		1356	1640	1.0F
	1825	2152	1.3E		1827	2145	0.9E		2018	2333	1.3E		1941	2302	1.1E
8	0029	0339	1.7F	23	0011	0343	1.3F	8	0218	0521	1.7F	23	0135	0450	1.5F
M	0706	1045	1.6E	Tu	0704	1035	1.2E	Th	0852	1221	1.7E	F	0815	1143	1.4E
	1350	1626	1.4F		1349	1629	0.9F		1527	1803	1.4F		1440	1726	1.2F
	1930	2251	1.3E		1923	2237	0.9E		2110				2032	2355	1.3E
9	0129	0437	1.8F	24	0106	0431	1.4F	9		0025	1.4E	24	0231	0540	1.6F
Tu	0806	1142	1.7E	W	0756	1125	1.3E	F	0310	0613	1.7F	Sa	0901	1229	1.6E
	1449	1723	1.4F		1435	1715	1.0F		0939	1307	1.7E		1522	1812	1.4F
	2030	2347	1.4E		2015	2329	1.0E		1612	1852	1.4F		2120		
									2156						
10	0228	0533	1.8F	25	0159	0518	1.5F	10		0112	1.4E	25		0045	1.4E
W	0901	1237	1.8E	Th	0843	1213	1.4E	Sa	0358	0701	1.7F	Su	0324	0629	1.7F
	1542	1819	1.5F		1518	1800	1.1F		1021	1349	1.7E		0945	1314	1.6E
	2124				2102				1653	1936	1.5F		1602	1857	1.6F
									2238				2206		
11		0041	1.4E	26		0019	1.1E	11		0155	1.4E	26		0134	1.6E
Th	0321	0627	1.8F	F	0250	0605	1.6F	Su	0442	0745	1.7F	M	0417	0717	1.7F
	0953	1328	1.8E		0928	1259	1.5E		1100	1427	1.6E		1029	1357	1.7E
	1633	1911	1.5F		1557	1843	1.2F		1730	2016	1.5F		1643	1941	1.7F
	2214				2147				2319				2252		
12		0132	1.4E	27		0108	1.3E	12		0235	1.3E	27		0222	1.7E
F	0412	0719	1.8F	Sa	0340	0652	1.6F	M	0525	0826	1.5F	Tu	0509	0805	1.7F
	1041	1414	1.7E		1010	1342	1.6E		1136	1501	1.5E		1113	1440	1.7E
	1721	1959	1.5F		1636	1926	1.3F		1802	2053	1.4F		1726	2025	1.8F
	2302				2231				2358				2340		
13		0218	1.4E	28		0154	1.3E	13		0313	1.3E	28		0310	1.7E
Sa	0501	0806	1.7F	Su	0429	0737	1.7F	Tu	0606	0906	1.4F	W	0602	0854	1.6F
	1127	1458	1.6E		1052	1423	1.6E		1212	1534	1.3E		1200	1525	1.6E
	1805	2044	1.4F		1715	2007	1.5F		1831	2130	1.4F		1810	2112	1.8F
	2348				2316										
14		0303	1.3E	29		0240	1.4E	14	0036	0352	1.2E				
Su	0548	0852	1.6F	M	0520	0822	1.7F	W	0647	0948	1.2F				
	1209	1538	1.5E		1134	1504	1.6E		1248	1606	1.2E				
	1845	2128	1.3F		1755	2050	1.6F		1859	2208	1.3E				
15	0031	0347	1.2E	30	0002	0327	1.4E	15	0114	0433	1.1E				
M	0633	0936	1.4F	Tu	0612	0910	1.6F	Th	0730	1031	1.0F				
	1248	1618	1.3E		1218	1548	1.5E		1325	1639	1.0E				
	1921	2211	1.3F		1838	2135	1.6F		1928	2248	1.2F				
				31	0051	0420	1.4E								
				W	0708	1002	1.5F								
					1305	1636	1.5E								
					1922	2226	1.7F								

Time meridian 75° W. 0000 is midnight. 1200 is noon.

DELAWARE BAY ENTRANCE, 1990

F-Flood, Dir. 327° True E-Ebb, Dir. 147° True

MARCH

APRIL

Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current		
Time			Time Vel.			Time			Time Vel.			Time			Time Vel.		
Day	h.m.		h.m.	knots		Day	h.m.		h.m.	knots		Day	h.m.		h.m.	knots	
1	0030		0403	1.6E		16	0035		0354	1.2E		1	0205		0549	1.5E	
Th	0659		0946	1.5F		F	0659		0956	1.0F		Su	0851		1131	1.2F	
	1249		1615	1.4E			1250		1552	1.0E			1431		1759	1.1E	
	1858		2203	1.8F			1842		2203	1.3F			2036		2344	1.5F	
2	0122		0502	1.5E		17	0114		0434	1.1E		2	0313		0654	1.3E	
F	0758		1043	1.4F		Sa	0741		1039	0.9F		M	1000		1235	1.1F	
	1342		1711	1.3E			1330		1629	0.9E			1540		1904	1.1E	
	1950		2259	1.7F			1920		2244	1.2F			2145				
3	0221		0603	1.4E		18	0158		0524	1.0E		3			0050	1.4F	
Sa	0902		1144	1.2F		Su	0830		1127	0.8F		Tu	0425		0759	1.3E	
	1442		1813	1.2E			1415		1718	0.8E			1107		1341	1.1F	
	2049						2005		2332	1.1F			1651		2009	1.1E	
4			0000	1.5F		19	0250		0620	1.0E		4			0158	1.3F	
Su	0327		0708	1.4E		M	0927		1219	0.7F		M	0534		0902	1.3E	
	1012		1248	1.1F			1509		1816	0.8E			1208		1447	1.1F	
	1549		1917	1.1E			2059						1756		2111	1.1E	
5			0103	1.5F		20			0026	1.1F		5	0000		0303	1.3F	
M	0437		0816	1.3E		Tu	0350		0723	1.0E		Th	0634		0957	1.4E	
	1122		1355	1.1F			1028		1315	0.7F			1301		1544	1.2F	
	1659		2025	1.1E			1610		1926	0.8E			1854		2206	1.2E	
	2305						2201										
6			0211	1.4F		21			0125	1.1F		6	0100		0359	1.4F	
Tu	0547		0922	1.4E		W	0451		0828	1.0E		F	0725		1044	1.4E	
	1227		1502	1.1F			1127		1414	0.8F			1349		1632	1.3F	
	1807		2128	1.1E			1711		2038	0.9E			1944		2255	1.3E	
7			0317	1.5F		22			0228	1.2F		7	0153		0448	1.4F	
W	0652		1020	1.5E		Th	0551		0927	1.1E		Sa	0809		1126	1.4E	
	1326		1602	1.2F			1221		1512	0.9F			1429		1714	1.4F	
	1910		2225	1.2E			1811		2140	1.0E			2027		2340	1.4E	
8			0416	1.5F		23			0328	1.3F		8	0241		0532	1.4F	
Th	0748		1111	1.5E		F	0648		1019	1.3E		Su	0847		1205	1.4E	
	1418		1655	1.3F			1311		1603	1.2F			1505		1755	1.5F	
	2005		2317	1.3E			1908		2236	1.2E			2105				
9			0507	1.6F		24			0422	1.5F		9			0023	1.4E	
F	0836		1157	1.6E		Sa	0741		1108	1.4E		M	0324		0615	1.4F	
	1503		1742	1.4F			1359		1652	1.4F			0922		1241	1.4E	
	2051						2002		2329	1.4E			1536		1833	1.5F	
10			0005	1.4E		25			0514	1.6F		10			0102	1.4E	
Sa	0257		0555	1.6F		Su	0830		1156	1.6E		Tu	0404		0655	1.4F	
	0917		1240	1.6E			1443		1739	1.6F			0958		1316	1.3E	
	1542		1827	1.5F			2052						1604		1909	1.5F	
	2132												2216				
11			0049	1.4E		26			0022	1.6E		11			0140	1.4E	
Su	0341		0640	1.6F		M	0309		0606	1.7F		W	0442		0735	1.3F	
	0954		1318	1.5E			0918		1243	1.7E			1033		1349	1.3E	
	1618		1907	1.5F			1527		1827	1.8F			1632		1943	1.5F	
	2211						2140						2251				
12			0130	1.4E		27			0113	1.8E		12			0214	1.4E	
M	0423		0721	1.5F		Tu	0403		0657	1.8F		Th	0519		0812	1.2F	
	1029		1352	1.5E			1005		1330	1.7E			1109		1419	1.2E	
	1649		1943	1.5F			1611		1914	2.0F			1701		2017	1.4F	
	2248						2229						2326				
13			0207	1.4E		28			0203	1.8E		13			0249	1.4E	
Tu	0502		0800	1.5F		W	0458		0748	1.7F		F	0556		0848	1.1F	
	1103		1424	1.4E			1053		1416	1.6E			1146		1450	1.1E	
	1716		2018	1.5F			1658		2002	2.0F			1732		2050	1.4F	
	2323						2318										
14			0243	1.4E		29			0253	1.8E		14			0324	1.3E	
W	0541		0838	1.3F		Th	0556		0838	1.7F		Sa	0633		0926	1.0F	
	1138		1453	1.3E			1142		1504	1.6E			1222		1521	1.0E	
	1742		2051	1.4F			1746		2051	1.9F			1809		2125	1.3F	
	2359																
15			0317	1.3E		30			0347	1.7E		15			0405	1.2E	
Th	0619		0916	1.2F		F	0648		0931	1.5F		Su	0714		1007	0.9F	
	1213		1522	1.1E			1235		1557	1.4E			1302		1600	0.9E	
	1811		2126	1.3F			1838		2143	1.8F			1849		2207	1.2F	
						31			0105	0.44E							
						Sa	0747		1029	1.4F							
							1330		1656	1.3E							
							1933		2241	1.6F							

Time meridian 75° W. 0000 is midnight, 1200 is noon.

91

MAY

JUNE

Time meridian 75° W. 0000 is midnight. 1200 is noon.

DELAWARE BAY ENTRANCE, 1990

F-Flood, Dir. 327° True E-Ebb, Dir. 147° True

JULY

AUGUST

Slack Water				Maximum Current				Slack Water				Maximum Current				Slack Water				Maximum Current							
Day		Time	Vel.	Day		Time	Vel.	Day		Time	Vel.	Day		Time	Vel.	Day		Time	Vel.	Day		Time	Vel.				
		h.m.	knots			h.m.	knots			h.m.	knots			h.m.	knots			h.m.	knots			h.m.	knots				
1 Su		0121	0.9F	16 M		0040	1.2F	1 W		0230	0.7F	16 Th		0000	0.236	1.2F			0236	1.2F			0122	1.2F			
		0417	0.9E			0705	1.2E			0514	0.8E			0536	0.906			1.2E									
		1033	1.2F			0949	1.6F			1103	1.1F			1141	1.452			1.6F									
		1700	1.0E			1623	1.4E			1757	1.0E			1821	2202			1.5E									
	2337			2302																							
2 M		0218	0.9F	17 Tu		0144	1.2F	2 Th		0327	0.7F	17 F		0105	0.341	1.2F			1009	1.3F			0127	1.7F			
		0507	0.9E			0811	1.2E			0611	0.8E			0644	1.009			1.3F									
		1113	1.2F			1401	1.6F			1157	1.530			1247	1555			1.7F									
		1749	1.1E			1726	1.15E			1851	1.1E			1927	2300			1.6F									
3 Tu		0034	0.8F	18 W		0250	1.2F	3 F		0417	0.8F	18 Sa		0205	0.440	1.3F			1106	1.4E			0127	1.7F			
		0558	0.9E			0917	1.2E			0707	1.022			0748	1106			1.4E									
		1155	1.2F			1151	1.7F			1252	1.620			1349	1653			1.7F									
		1838	1.1E			1829	1.6E			1943	1.2E			2024	2354			1.7E									
4 W		0127	0.9F	19 Th		0353	1.3F	4 Sa		0503	0.9F	19 Su		0258	0.535	1.4E			1200	1.4E			0127	1.7F			
		0651	0.9E			1019	1.3E			0800	1.113			0843	1200			1.4E									
		1240	1.3F			1605	1.8E			1345	1.706			1446	1747			1.8F									
		1926	1.2E			1932	1.7E			2030	2357			2115													
5 Th		0214	0.9F	20 F		0452	1.4F	5 Su		0547	1.0F	20 M		0043		1.7E			0626	1.5F			0127	1.7F			
		0742	0.9E			1118	1.4E			0848	1.203			0933	1251			1.5E									
		1327	1.4F			1357	1.8F			1436	1.752			1537	1839			1.8F									
		2012	1.3E			2032				2114				2200													
6 F		0257	1.0F	21 Sa		0009	1.8E	6 M		0041	1.5E	21 Tu		0128		1.7E			0713	1.6F			0127	1.7F			
		0831	1.0E			0549	1.5F			0342	0.629			0430	1019			1.337	1.5E								
		1414	1.4F			1215	1.4E			0932	1.250			1019	1337			1.5E									
		2057				1455	1.9F			1523	1.836			1626	1926			1.7F									
				2128																							
7 Sa		0024	1.4E	22 Su		0102	1.8E	7 Tu		0123	1.5E	22 W		0209		1.7E			0756	1.6F			0127	1.7F			
		0337	1.0F			0644	1.5F			0418	0.709			0510	1101			1.420	1.5E								
		0917	1.1E			1308	1.5E			1014	1.335			1101	1420			1.5E									
		1459	1.4F			1549	1.9F			1610	1.919			1711	2009			1.6F									
	2138			2219																							
8 Su		0108	1.4E	23 M		0152	1.8E	8 W		0203	1.6E	23 Th		0246		1.5E			0835	1.5F			0127	1.7F			
		0414	1.1F			0735	1.5F			0453	0.748			0546	1142			1501	1.4E								
		0959	1.1E			1040	1.5E			1056	1.419			1142	1501			1.4E									
		1542	1.5F			1641	1.945			1658	2002			1755	2052			1.5F									
	2218			2307																							
9 M		0149	1.5E	24 Tu		0237	1.8E	9 Th		0241	1.6E	24 F		0320		1.4E			0914	1.4F			0127	1.7F			
		0450	1.1F			0822	1.5F			0530	0.826			0617	0941			1.4F									
		1040	1.1E			1128	1.4E			1138	1502			1221	1541			1.3E									
		1626	1.5F			1731	1.7F			1748	2045			1838	2133			1.3F									
	2257			2351																							
10 Tu		0228	1.5E	25 W		0320	1.6E	10 F		0320	1.5E	25 Sa		0035	0.354	1.2E			0952	1.4F			0127	1.7F			
		0526	1.2F			0625	0.907			0609	0.908			0646	0952			1.4F									
		1120	1.2E			1214	1.3E			1222	1549			1300	1622			1.2E									
		1710	1.5F			1819	1.6F			1839	2133			1921	2218			1.1F									
11 W		0306	1.5E	26 Th		0401	1.5E	11 Sa		0403	1.4E	26 Su		0112	0.428	1.0E			1033	1.3F			0127	1.7F			
		0602	0.852			0703	0.951			0651	0.954			0716	1033			1.3F									
		1201	1.519			1258	1.617			1310	1.643			1341	1705			1.1E									
		1758	2103			1907	2206			1934	2226			2008	2305			0.9F									
12 Th		0015	0.345	27 F		0441	1.3E	12 Su		0452	1.3E	27 M		0153	0.506	0.9E			1116	1.2F			0127	1.7F			
		0639	0.933			1036	1.3F			0123	0.737			0750	1116			1.2F									
		1245	1.607			1341	1.704			1402	1.741			1427	1753			1.0E									
		1849	2150			1957	2255			2035	2324			2059	2354			0.8F									
13 F		0056	0.428	28 Sa		0521	1.1E	13 M		0548	1.2E	28 Tu		0239	0.549	0.8E			1203	1.1F			0127	1.7F			
		0720	1.020			1121	1.2F			0829	1.141			0831	1203			1.1F									
		1332	1.700			1427	1.752			1501	1.843			1519	1847			0.9E									
		1944	2243			2050	2345			2142				2159													
14 Sa		0142	0.515	29 Su		0236	0.601	14 Tu		0624	1.2F	29 W		0047		0.7F			0642	0.7E			0127	1.7F			
		0804	1.110			1206	1.2F			0319	0.650			0921	1254			1.1F									
		1424	1.757			1841	1.0E			0929	1.241			1617	1947			0.9E									
		2046	2340			2150				1607	1.950			2301													
15 Su		0235	0.606	30 M		0037	0.8F	15 W		0129	1.1F	30 Th		0144		0.7F			0746	0.7E			0127	1.7F			
		0854	1.204			0645	0.8E			0428	0.758			0433	0746			0.7E									
		1522	1.858			0926	1.1F			1034	1.345			1019	1352			1.1F									
		2153				1609	1.935			1714	2059			1716	2049			1.0E									
				2251																							
				31 Tu		0132	0.7F					31 F		0244		0.7F			0853	0.8E			0127	1.7F			
				0418	0.734																						
				1012	1.343																						
				1703	2.032																						
				2305	1.0E																						

Time meridian 75° W. 0000 is midnight. 1200 is noon.

93

F-Flood, Dir. 327° True E-Ebb, Dir. 147° True

OCTOBER

Day	Slack Water Time			Maximum Current Time Vel.			Day	Slack Water Time			Maximum Current Time Vel.			Day	Slack Water Time			Maximum Current Time Vel.						
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots							
1 Sa	0052	0339	0.8F	16 Su	0147	0426	1.3F	1 M	0049	0345	1.1F	16 Tu	0204	0451	1.5F	17 W	0243	0534	1.5F	18 Th	0318	0614	1.6F	
	0631	0952	0.9E		0737	1052	1.4E		0649	1015	1.1E		0807	1122	1.4E		0848	1206	1.5E		0925	1248	1.5E	
	1220	1546	1.2F		1342	1641	1.6F		1252	1603	1.4F		1422	1711	1.5F		1509	1757	1.4E		1551	1840	1.4F	
	1909	2236	1.2E		2010	2332	1.6E		1919	2246	1.3E		2028	2345	1.4E		2106				2143			
2 Su	0140	0426	0.9F	17 M	0236	0516	1.4F	2 Tu	0134	0431	1.3F	17 W	0243	0534	1.5F	18 Th	0318	0614	1.6F	19 F	0350	0653	1.6F	
	0726	1045	1.1E		0828	1142	1.4E		0741	1107	1.4E		0848	1206	1.5E		0925	1248	1.5E		1001	1327	1.5E	
	1318	1636	1.4F		1436	1732	1.6F		1351	1653	1.5F		1509	1757	1.4E		1551	1840	1.4F		1631	1921	1.3F	
	1959	2323	1.3E		2055				2008	2331	1.5E		2106				2143				2220			
3 M	0222	0510	1.1F	18 Tu		0018	1.6E	3 W	0218	0516	1.5F	4 Th	0300	0601	1.7F	5 F	0342	0647	1.9F	6 Sa	0419	0729	1.5F	
	0816	1135	1.2E		0319	0603	1.5F		0830	1158	1.5E		0916	1248	1.7E		1002	1337	1.8E		1037	1403	1.4E	
	1413	1723	1.5F		0913	1230	1.5E		1447	1743	1.6F		1540	1832	1.6F		1631	1922	1.7F		1710	1959	1.3F	
	2044				1524	1819	1.6F		2054				2140				2226				2314			
4 Tu		0008	1.5E	19 W		0059	1.6E	4 Th		0017	1.5E	5 F		0103	1.6E	6 Sa		0137	1.8E	7 Su		0157	1.8E	
	0301	0553	1.3F		0357	0646	1.6F		0300	0501	1.7F		0342	0647	1.9F		0419	0729	1.5F		0458	0759	1.8F	
	0902	1225	1.4E		0953	1314	1.5E		0916	1248	1.7E		1002	1337	1.8E		1037	1403	1.4E		1113	1444	1.6E	
	1505	1810	1.6F		1609	1904	1.6F		1540	1832	1.6F		1631	1922	1.7F		1710	1959	1.3F		1737	2028	1.6F	
5 W		0052	1.6E	20 Th		0136	1.5E	5 F		0103	1.6E	6 Sa		0137	1.8E	7 Su		0157	1.8E	8 M		0205	1.9E	
	0339	0635	1.5F		0431	0725	1.6F		0342	0647	1.9F		0419	0729	1.5F		0458	0759	1.8F		0531	0856	1.1F	
	0946	1313	1.5E		1031	1354	1.5E		1002	1337	1.8E		1037	1403	1.4E		1113	1444	1.6E		1137	1442	1.5F	
	1555	1856	1.6F		1651	1945	1.5F		1631	1922	1.7F		1710	1959	1.3F		1737	2028	1.6F		1815	2149	1.4E	
6 Th		0133	1.6E	21 F		0210	1.4E	6 Sa		0149	1.6E	7 Su		0235	1.5E	8 M		0325	1.4E	9 Tu		0422	1.3E	
	0418	0717	1.7F		0502	0802	1.5F		0428	0734	2.0F		0419	0729	1.5F		0458	0759	1.8F		0531	0856	1.1F	
	1029	1358	1.6E		1108	1431	1.4E		1050	1426	1.8E		1037	1403	1.4E		1113	1444	1.6E		1137	1442	1.5F	
	1645	1942	1.6F		1732	2024	1.4F		1724	2011	1.6F		1710	1959	1.3F		1737	2028	1.6F		1815	2149	1.4E	
7 F		0214	1.6E	22 Sa		0242	1.3E	7 Su		0235	1.5E	8 M		0325	1.4E	9 Tu		0422	1.3E	10 W		0526	1.2E	
	0458	0759	1.8F		0530	0837	1.5F		0515	0821	2.0F		0419	0729	1.5F		0458	0759	1.8F		0531	0856	1.1F	
	1113	1444	1.6E		1144	1507	1.3E		1140	1517	1.8E		1037	1403	1.4E		1113	1444	1.6E		1137	1442	1.5F	
	1737	2028	1.6F		1811	2103	1.2F		1819	2102	1.5F		1710	1959	1.3F		1737	2028	1.6F		1815	2149	1.4E	
8 Sa		0256	1.5E	23 Su		0312	1.1E	8 M		0325	1.4E	9 Tu		0422	1.3E	10 W		0526	1.2E	11 Th		0631	1.1E	
	0540	0843	1.8F		0559	0912	1.4F		0605	0912	1.9F		0419	0729	1.5F		0458	0759	1.8F		0531	0856	1.1F	
	1200	1532	1.6E		1221	1543	1.2E		1232	1614	1.6E		1037	1403	1.4E		1113	1444	1.6E		1137	1442	1.5F	
	1829	2117	1.5F		1850	2144	1.1F		1915	2157	1.4F		1710	1959	1.3F		1737	2028	1.6F		1815	2149	1.4E	
9 Su	0019	0342	1.4E	24 M	0039	0342	1.0E	9 Tu	0058	0422	1.3E	10 W	0157	0526	1.2E	11 Th	0205	0536	1.2E	12 F	0212	0541	1.3E	
	0626	0931	1.8F		0630	0950	1.3F		0700	1008	1.7F		0719	1042	1.1F		0812	1123	1.6F		0816	1137	1.7F	
	1249	1627	1.5E		1300	1623	1.1E		1330	1715	1.5E		1358	1730	1.0E		1446	1831	1.4E		1466	1851	1.3E	
	1924	2211	1.4F		1932	2228	0.9F		2015	2257	1.3F		1946	2241	0.8F		2025	2310	1.2F		2047	2330	1.1F	
10 M	0109	0435	1.3E	25 Tu	0118	0417	0.9E	10 W	0157	0526	1.2E	11 Th	0205	0536	1.2E	12 F	0212	0541	1.3E	13 Sa	0222	0551	1.4E	
	0716	1024	1.7F		0707	1032	1.2F		0800	1110	1.5F		0719	1042	1.1F		0812	1123	1.6F		0816	1137	1.7F	
	1344	1727	1.4E		1344	1710	1.0E		1434	1819	1.4E		1358	1730	1.0E		1446	1831	1.4E		1466	1851	1.3E	
	2025	2310	1.2F		2018	2315	0.8F		2121				2033	2330	0.8F		2047	2330	1.1F		2069	2354	1.0F	
11 Tu	0205	0536	1.2E	26 W	0202	0504	0.8E	11 Th		0000	1.2F	12 F		0105	1.1F	13 Sa		0211	1.2F	14 Su		0313	1.3F	
	0812	1123	1.6F		0750	1119	1.1F		0303	0631	1.1E		0421	0743	0.9E		0531	0856	1.1F		0637	0945	1.3E	
	1446	1831	1.4E		1434	1805	1.0E		0908	1215	1.4F		1018	1330	1.1F		1124	1432	1.2F		1228	1530	1.3F	
	2132				2112				1546	1924	1.3E		1648	2021	1.1E		1743	2115	1.2E		1838	2206	1.3E	
12 W		0012	1.2F	27 Th		0007	0.7F	12 F		0105	1.1F	13 Sa		0211	1.2F	14 Su		0313	1.3F	15 M		0422	1.3E	
	0310	0641	1.1E		0254	0601	0.7E		0415	0737	1.1E		0421	0743	0.9E		0531	0856	1.1F		0637	0945	1.3E	
	0917	1227	1.5F		0841	1212	1.0F		1020	1322	1.4F		1018	1330	1.1F		1124	1432	1.2F		1228	1530	1.3F	
	1556	1939	1.3E		1532	1904	0.9E		1656	2029	1.3E		1648	2021	1.1E		1743	2115	1.2E		1838	2206	1.3E	
13 Th		0117	1.1F	28 F		0100	0.7F	13 Sa		0211	1.2F	14 Su		0313	1.3F	15 M		0422	1.3E	16 Tu		0526	1.2E	
	0421	0749	1.1E		0355	0708	0.7E		0524	0842	1.2E		0421	0743	0.9E		0531	0856	1.1F		0637	0945	1.3E	
	1027	1333	1.4F		0942	1309	1.1F		1130	1430	1.4F		1018	1330	1.1F		1124	1432	1.2F		1228	1530	1.3F	
	1707	2047	1.4E		1633	2007	1.0E		1800	2128	1.4E		1648	2021	1.1E		1743	2115	1.2E		1838	2206	1.3E	
14 F		0225	1.1F	29 Sa		0158	0.7F	14 Su	0029	0313	1.3F	15 M	0120	0405	1.4F	16 Tu	0205	0536	1.2E	17 W	0243	0574	1.3E	
	0531	0856	1.1E		0456	0818	0.8E		0626	0941	1.2E		0419	0729	1.5F		0458	0759	1.8F		0531	0856	1.1F	
	1137	1442	1.5F		1047	1410	1.1F		1233	1531	1.4F		1037	1403	1.4E		1113	1444	1.6E		1137	1442	1.5F	
	1815	2149	1.4E		1732	2106	1.1E		1856	2218	1.4E		1710	1959	1.3F		1737	2028	1.6F		1815	2149	1.4E	
15 Sa	0051	0330	1.2F	30 Su	0001	0255	0.9F	15 M	0120	0405	1.4F	16 Tu	0205	0536	1.2E	17 W	0243	0574	1.3E	18 Th	0281	0611	1.4E	
	0637	0957	1.3E		0554	0920	1.0E		0720	1033	1.3E		0419	0729	1.5F		0458	0759	1.8F		0531	0856	1.1F	
	1242	1546	1.5F		1150	1509	1.2F		1330	1624	1.4F		1037	1403	1.4E		1113	1444	1.6E		1137	1442	1.5F	
	1917	2244	1.5E		1827	2158	1.2E		1945	2304	1.4E		1710	1959	1.3F		1737	2028	1.6F		1815	2149	1.4E	
16 Su		0012	1.2F	31 M		0007	0.7F	16 Tu		0105	1.1F	17 W		0243	0574	1.3E	18 Th		0313	1.3F	19 F		0422	1.3E
	0310	0641	1.1E		0254	0601	0.7E		0415	0737	1.1E		0421	0743	0.9E	0531		0856	1.1F	0637		0945	1.3E	
	0917	1227	1.5F		0841	1212	1.0F		1020	1322	1.4F		1018	1330	1.1F	1124		1432	1.2F	1228		1530	1.3F	
	1556	1939	1.3E		1532	1904	0.9E		1656	2029	1.3E		1648	2021	1.1E	1743		2115	1.2E	1838		2206	1.3E	
17 M		0117	1.1F	32 W		0100	0.7F	17 Tu		0211	1.2F	18 Th		0313	1.3F	19 F		0422	1.3E	20 Sa		0526	1.2E	
	0421	0749	1.1E		0355	0708	0.7E		0524	0842	1.2E		0421	0743	0.9E		0531	0856	1.1F		0637	0945	1.3E	
	1027	1333	1.4F		0942	1309	1.1F		1130	1430	1.4F		1018	1330	1.1F		1124	1432	1.2F		1228	1530	1.3F	
	1707	2047	1.4E		1633	2007	1.0E		1800	2128	1.4E		1648	2021	1.1E		1743	2115	1.2E		1838	2206	1.3E	
18 W		0225	1.1F	33 Th		0158	0.7F	18 Tu	0029	0313	1.3F	19 F	0120	0405	1.4F	20 Sa	0205	0536	1.2E	21 M	0243	0574	1.3E	
	053																							

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 327° True E-Ebb, Dir. 147° True

DECEMBER

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 300° True E-Ebb, Dir. 129° True

JANUARY								FEBRUARY							
Day	Slack Water			Day	Maximum Current			Day	Slack Water			Day	Maximum Current		
	Time	Time	Vel.		Time	Time	Vel.		Time	Time	Vel.		Time	Time	Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 M	0125 0809 1356 2050	0501 1044 1733 2315	1.2E 0.9F 1.3E 0.7F	16 Tu	0229 0919 1424 2139	0605 1138 1822	1.1E 0.6F 1.1E	1 Th	0308 0954 1443 2150	0645 1208 1845	1.2E 0.7F 1.3E	16 F	0332 1050 1427 2223	0017 0706 1237 1849	0.7F 0.8E 0.3F 0.9E
2 Tu	0219 0904 1431 2135	0601 1134 1823	1.1E 0.8F 1.3E	17 W	0324 1022 1452 2228	0015 0701 1228 1902	0.8F 0.9E 0.4F 0.9E	2 F	0415 1107 1537 2250	0032 0748 1307 1941	1.0F 1.1E 0.5F 1.2E	17 Sa	0435 1202 1459 2324	0105 0759 1329 1938	0.6F 0.7E * 0.8E
3 W	0324 1009 1511 2223	0007 0702 1229 1912	0.8F 1.1E 0.7F 1.2E	18 Th	0428 1134 1522 2320	0104 0756 1319 1943	0.7F 0.8E 0.3F 0.9E	3 Sa	0529 1220 1653 2357	0859 1415 2047	1.1E 0.4F 1.1E	18 Su	0542 1317 1553	0909 1439 2037	0.5F 0.6E *
4 Th	0438 1121 1604 2318	0059 0805 1326 2004	0.9F 1.1E 0.5F 1.2E	19 F	0534 1250 1607	0159 0904 2031	0.6F 0.7E 0.8E	4 Su	0639 1330 1812	0237 1013 2201	0.9F 1.1E 1.1E	19 M	0028 0644 1419 1736	0325 1023 1611 2149	0.5F 0.7E * 0.8E
5 F	0549 1233 1711	0156 0916 1434 2106	0.9F 1.1E 0.5F 1.2E	20 Sa	0017 0634 1401 1718	0308 1017 1546 2134	0.6F 0.7E * 0.8E	5 M	0105 0745 1432 1924	0358 1117 1647 2308	0.9F 1.2E 0.5F 1.2E	20 Tu	0127 0741 1459 1851	0432 1112 1657 2251	0.6F 0.8E 0.3F 0.9E
6 Sa	0015 0653 1341 1819	0302 1026 1550 2212	0.9F 1.2E 0.5F 1.2E	21 Su	0112 0730 1454 1824	0418 1110 1643 2234	0.6F 0.8E * 0.9E	6 Tu	0211 0846 1525 2030	0503 1212 1739	0.9F 1.3E 0.7F	21 W	0218 0830 1529 1958	0513 1152 1734 2341	0.7F 1.0E 0.4F 1.1E
7 Su	0115 0755 1441 1926	0409 1126 1651 2313	1.0F 1.3E 0.6F 1.3E	22 M	0206 0822 1530 1926	0504 1152 1723 2323	0.7F 0.9E 0.3F 1.0E	7 W	0310 0938 1610 2127	0006 0553 1304 1827	1.3E 1.0F 1.4E 0.8F	22 Th	0301 0912 1558 2057	0548 1232 1810	0.9F 1.1E 0.6F
8 M	0216 0852 1533 2030	0505 1221 1742	1.1F 1.4E 0.7F	23 Tu	0251 0908 1601 2024	0542 1232 1800	0.8F 1.0E 0.4F	8 Th	0401 1023 1651 2217	0101 0643 1351 1915	1.4E 1.1F 1.5E 0.9F	23 F	0342 0957 1627 2149	0031 0626 1311 1850	1.2E 1.0F 1.3E 0.8F
9 Tu	0312 0945 1620 2129	0010 0556 1314 1832	1.4E 1.2F 1.5E 0.8F	24 W	0331 0949 1631 2117	0010 0619 1310 1840	1.1E 0.9F 1.1E 0.5F	9 F	0450 1103 1731 2303	0152 0732 1432 2002	1.5E 1.1F 1.5E 0.9F	24 Sa	0425 1026 1659 2238	0120 0707 1350 1932	1.4E 1.1F 1.5E 0.9F
10 W	0406 1034 1707 2221	0106 0648 1404 1925	1.5E 1.3F 1.6E 0.9F	25 Th	0409 1027 1704 2204	0056 0657 1348 1921	1.2E 1.0F 1.2E 0.6F	10 Sa	0537 1139 1811 2349	0236 0817 1509 2045	1.5E 1.1F 1.5E 1.0F	25 Su	0509 1102 1733 2327	0207 0750 1429 2014	1.5E 1.1F 1.6E 1.1F
11 Th	0457 1120 1751 2312	0159 0742 1449 2016	1.6E 1.3F 1.6E 0.9F	26 F	0448 1103 1738 2251	0142 0739 1424 2003	1.3E 1.1F 1.4E 0.7F	11 Su	0624 1212 1851	0317 0859 1542 2124	1.5E 1.0F 1.4E 1.0F	26 M	0557 1139 1812	0252 0834 1507 2055	1.6E 1.1F 1.7E 1.3F
12 F	0547 1204 1839	0247 0832 1531 2103	1.6E 1.2F 1.6E 1.0F	27 Sa	0529 1139 1813 2338	0226 0819 1459 2043	1.4E 1.1F 1.5E 0.8F	12 M	0033 0712 1242 1929	0357 0938 1614 2204	1.4E 0.9F 1.3E 1.0F	27 Tu	0016 0648 1217 1854	0338 0918 1547 2137	1.6E 1.1F 1.7E 1.3F
13 Sa	0001 0638 1245 1924	0331 0918 1612 2149	1.5E 1.1F 1.5E 0.9F	28 Su	0612 1215 1851	0309 0859 1536 2122	1.5E 1.1F 1.5E 0.9F	13 Tu	0116 0801 1310 2008	0438 1019 1646 2245	1.2E 0.7F 1.2E 0.9F	28 W	0105 0741 1257 1939	0428 1004 1632 2222	1.6E 1.0F 1.6E 1.3F
14 Su	0051 0730 1321 2009	0417 1003 1654 2235	1.4E 1.0F 1.3E 0.9F	29 M	0028 0701 1249 1931	0354 0939 1616 2202	1.4E 1.1F 1.5E 1.0F	14 W	0158 0851 1336 2047	0526 1102 1722 2330	1.1E 0.6F 1.1E 0.8F	15 Th	0242 0946 1401 2131	0616 1149 1804	0.9E 0.4F 0.9E
15 M	0140 0822 1355 2052	0508 1049 1738 2324	1.2E 0.8F 1.2E 0.8F	30 Tu	0118 0754 1325 2012	0444 1023 1700 2248	1.4E 1.0F 1.5E 1.1F								
				31 W	0210 0850 1401 2058	0543 1113 1751 2338	1.3E 0.8F 1.4E 1.0F								

Time meridian 75° W. 0000 is midnight. 1200 is noon.
 * Current weak and variable.

CHESAPEAKE BAY ENTRANCE, VIRGINIA, 1990

F-Flood, Dir. 300° True E-Ebb, Dir. 129° True

MARCH

APRIL

MARCH				APRIL							
Slack Water Time		Maximum Current Time Vel.		Slack Water Time		Maximum Current Time Vel.		Slack Water Time		Maximum Current Time Vel.	
Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1 Th	0156 0839 1339 2029	0525 1054 1724 2313	1.4E 0.8F 1.5E 1.2F	16 F	0208 0914 1324 2046	0535 1114 1718 2334	0.9E 0.4F 1.0E 0.7F	1 Su	0334 1033 1522 2216	0717 1240 1913 2402	1.3E 0.6F 1.2E 0.9F
2 F	0249 0940 1427 2125	0628 1151 1823 2352	1.3E 0.7F 1.3E 1.0F	17 Sa	0249 1010 1352 2135	0624 1201 1809 2352	0.8E 0.3F 0.9E 0.6F	2 M	0448 1147 1647 2332	0054 0824 1348 2023	0.9F 1.2E 0.5F 1.1E
3 Sa	0353 1050 1526 2231	0733 1253 1925 2402	1.1F 1.2E 0.5F 1.2E	18 Su	0341 1118 1422 2233	0715 1250 1903 2402	0.7E * 0.8E 0.5F	3 Tu	0601 1257 1810 2402	0205 0938 1522 2142	0.7F 1.2E 0.5F 1.0E
4 Su	0508 1205 1649 2345	0842 1401 2035 2402	0.9F 1.1E 0.4F 1.1E	19 M	0449 1229 1503 2339	0811 1346 1959 2402	0.5F 0.7E * 0.8E	4 W	0049 0706 1359 1922	0347 1042 1644 2253	0.6F 1.2E 0.6F 1.1E
5 M	0623 1317 1813	0959 1532 2154	0.8F 1.1E 0.4F 1.1E	20 Tu	0555 1331 1644	0218 0920 1514 2106	0.5F 0.7E * 0.8E	5 Th	0200 0802 1449 2026	0459 1136 1731 2350	0.7F 1.3E 0.7F 1.2E
6 Tu	0100 0731 1420 1926	0356 1104 1649 2303	0.7F 1.2E 0.5F 1.2E	21 W	0040 0651 1412 1824	0338 1023 1624 2217	0.5F 0.8E 0.3F 0.9E	6 F	0301 0849 1529 2119	0542 1222 1809 2402	0.7F 1.3E 0.8F 1.0E
7 W	0209 0831 1511 2031	0506 1158 1738 2303	0.8F 1.3E 0.7F 1.2E	22 Th	0137 0739 1443 1936	0433 1108 1704 2314	0.7F 1.0E 0.5F 1.1E	7 Sa	0351 0927 1604 2203	0042 0617 1303 1845	1.2E 0.7F 1.3E 0.9F
8 Th	0309 0921 1553 2126	0553 1247 1822 2402	1.3E 0.9F 1.4E 0.8F	23 F	0229 0823 1512 2039	0512 1149 1739 2402	0.8F 1.2E 0.7F 1.0F	8 Su	0436 0958 1637 2242	0130 0654 1340 1921	1.3E 0.7F 1.3E 1.0F
9 F	0359 1001 1631 2212	0636 1332 1904 2402	1.3E 0.9F 1.4E 0.9F	24 Sa	0317 0904 1544 2133	0552 1230 1817 2402	1.2E 0.9F 1.4E 1.0F	9 M	0518 1025 1708 2319	0211 0734 1410 1956	1.3E 0.7F 1.3E 1.1F
10 Sa	0443 1036 1707 2255	0718 1410 1944 2402	1.4E 0.9F 1.4E 1.0F	25 Su	0403 0943 1619 2222	0634 1312 1859 2402	1.0F 1.6E 1.2F 1.0F	10 Tu	0559 1052 1739 2355	0247 0812 1437 2032	1.3E 0.6F 1.2E 1.1F
11 Su	0528 1106 1740 2335	0758 1442 2022 2402	1.4E 0.9F 1.4E 1.0F	26 M	0451 1022 1657 2311	0721 1355 1944 2402	1.6E 1.1F 1.7E 1.4F	11 W	0640 1121 1814 2402	0850 1503 2106 2402	0.6F 1.2E 1.1F 1.0F
12 M	0611 1134 1815	0837 1510 2058	1.4E 0.8F 1.3E 1.1F	27 Tu	0540 1102 1738	0809 1438 2028	1.7E 1.1F 1.8E 1.5F	12 Th	0030 0723 1151 1851	0350 0927 1532 2141	1.2E 0.5F 1.2E 1.0F
13 Tu	0014 0657 1201 1849	0337 0914 1536 2134	1.3E 0.7F 1.3E 1.1F	28 W	0000 0632 1147 1823	0322 0857 1521 2114	1.7E 1.1F 1.8E 1.6F	13 F	0107 0806 1223 1930	0423 1004 1605 2219	1.1E 0.5F 1.1E 0.9F
14 W	0052 0741 1228 1926	0412 0951 1603 2210	1.2E 0.6F 1.2E 1.0F	29 Th	0049 0728 1233 1913	0412 0945 1608 2200	1.7E 1.0F 1.7E 1.5F	14 Sa	0144 0851 1255 2012	0504 1044 1647 2300	1.0E 0.4F 1.0E 0.8F
15 Th	0130 0827 1256 2004	0450 1030 1636 2250	1.1E 0.5F 1.1E 0.9F	30 F	0139 0824 1323 2007	0508 1037 1703 2252	1.6E 0.9F 1.5E 1.3F	15 Su	0223 0942 1326 2058	0554 1131 1739 2348	0.9E 0.3F 0.9E 0.7F
				31 Sa	0232 0926 1418 2107	0612 1137 1806 2351	1.4E 0.7F 1.3E 1.1F				

Time meridian 75° W. 0000 is midnight. 1200 is noon.

* Current weak and variable.

F-Flood, Dir. 300° True E-Ebb, Dir. 129° True

MAY								JUNE							
Day	Slack Water Time	Maximum Current		Day	Slack Water Time	Maximum Current		Day	Slack Water Time	Maximum Current		Day	Slack Water Time	Maximum Current	
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 Tu	0422 1122 1637 2315	0039 0802 1333 2007	0.9F 1.3E 0.6F 1.1E	16 W	0328 1058 1447 2213	0008 0708 1247 1909	0.7F 1.0E 0.3F 0.8E	1 F	0003 0535 1243 1841	0220 0928 1537 2206	0.5F 1.1E 0.7F 0.9E	16 Sa	0412 1131 1735	0119 0805 2051	0.6F 1.2E 0.9E
2 W	0528 1228 1757	0145 0908 1457 2122	0.7F 1.2E 0.6F 1.0E	17 Th	0413 1140 1623 2318	0057 0753 1340 2007	0.7F 1.0E 0.3F 0.8E	2 Sa	0117 0618 1332 1942	0335 1022 1637 2307	0.4F 1.1E 0.8F 1.0E	17 Su	0001 0501 1218 1839	0215 0857 1459 2200	0.6F 1.3E 0.9F 1.0E
3 Th	0030 0626 1326 1907	0308 1011 1623 2234	0.6F 1.2E 0.6F 1.0E	18 F	0500 1219 1753	0149 0842 1441 2114	0.6F 1.1E 0.5F 0.9E	3 Su	0226 0657 1418 2036	0436 1106 1716	0.4F 1.1E 0.8F	18 M	0109 0554 1306 1938	0321 0953 1559 2302	0.6F 1.4E 1.1F 1.2E
4 F	0142 0716 1415 2010	0429 1105 1711 2332	0.5F 1.2E 0.8F 1.1E	19 Sa	0024 0547 1259 1859	0251 0935 1542 2222	0.6F 1.2E 0.7F 1.0E	4 M	0322 0733 1458 2122	0000 0516 1144 1749	1.0E 0.4F 1.1E 0.9F	19 Tu	0211 0649 1358 2036	0423 1049 1651 2358	0.6F 1.5E 1.3F 1.3E
5 Sa	0248 0759 1457 2103	0514 1148 1746	0.5F 1.2E 0.9F	20 Su	0130 0634 1340 1959	0355 1026 1631 2320	0.6F 1.4E 1.0F 1.2E	5 Tu	0407 0811 1533 2201	0046 0552 1220 1823	1.0E 0.4F 1.1E 0.9F	20 W	0309 0748 1450 2130	0516 1143 1740	0.7F 1.5E 1.4F
6 Su	0340 0836 1531 2146	0024 0549 1227 1819	1.1E 0.5F 1.2E 0.9F	21 M	0231 0724 1425 2055	0448 1115 1715	0.7F 1.5E 1.3F	6 W	0444 0852 1610 2239	0129 0632 1256 1901	1.0E 0.4F 1.1E 1.0F	21 Th	0054 0608 0849 1543	1.5E 0.8F 1.6E 1.5F	
7 M	0424 0908 1603 2224	0112 0625 1302 1852	1.2E 0.5F 1.2E 1.0F	22 Tu	0327 0817 1511 2146	0015 0537 1205 1800	1.4E 0.8F 1.6E 1.5F	7 Th	0521 0934 1646 2316	0206 0715 1334 1942	1.0E 0.4F 1.1E 1.0F	22 F	0451 0948 1637 2314	0149 0703 1337 1926	1.6E 0.9F 1.7E 1.5F
8 Tu	0504 0939 1637 2300	0153 0704 1334 1929	1.2E 0.5F 1.2E 1.0F	23 W	0418 0911 1559 2236	0110 0628 1258 1849	1.6E 0.9F 1.7E 1.6F	8 F	0600 1014 1722 2354	0239 0759 1411 2022	1.1E 0.4F 1.2E 1.0F	23 Sa	0543 1047 1710	0240 0800 1431 2022	1.6E 0.9F 1.7E 1.5F
9 W	0542 1011 1710 2335	0228 0745 1405 2006	1.2E 0.5F 1.2E 1.0F	24 Th	0509 1006 1649 2327	0203 0722 1352 1942	1.7E 0.9F 1.7E 1.6F	9 Sa	0641 1055 1800	0311 0842 1448 2100	1.1E 0.4F 1.2E 1.0F	24 Su	0006 0638 1145 1826	0328 0855 1522 2114	1.6E 0.9F 1.6E 1.4F
10 Th	0622 1045 1746	0300 0826 1436 2043	1.2E 0.5F 1.2E 1.0F	25 F	0600 1101 1742	0253 0817 1444 2036	1.7E 0.9F 1.7E 1.6F	10 Su	0033 0725 1136 1840	0344 0921 1526 2136	1.1E 0.4F 1.1E 1.0F	25 M	0056 0731 1243 1922	0418 0948 1615 2205	1.6E 0.9F 1.5E 1.3F
11 F	0012 0704 1120 1823	0330 0904 1508 2119	1.1E 0.4F 1.2E 1.0F	26 Sa	0019 0656 1159 1839	0342 0911 1535 2128	1.7E 0.9F 1.7E 1.5F	11 M	0110 0808 1219 1921	0421 1001 1607 2215	1.1E 0.4F 1.1E 0.9F	26 Tu	0142 0826 1342 2019	0512 1044 1714 2259	1.5E 0.8E 1.4E 1.1F
12 Sa	0049 0747 1157 1904	0403 0942 1544 2156	1.1E 0.4F 1.1E 0.9F	27 Su	0111 0752 1258 1937	0436 1006 1630 2221	1.6E 0.9F 1.5E 1.3F	12 Tu	0147 0849 1305 2006	0505 1043 1656 2255	1.1E 0.4F 1.0E 0.9F	27 W	0227 0919 1442 2119	0607 1143 1817 2354	1.4E 0.8F 1.2E 0.9F
13 Su	0128 0831 1232 1945	0442 1022 1625 2236	1.0E 0.3F 1.0E 0.8F	28 M	0203 0850 1358 2037	0537 1105 1734 2320	1.5E 0.8F 1.4E 1.1F	13 W	0221 0929 1355 2053	0552 1131 1752 2341	1.1E 0.4F 0.9E 0.8F	28 Th	0309 1012 1547 2223	0658 1240 1918	1.3E 0.7F 1.1E
14 M	0207 0919 1309 2029	0531 1106 1715 2321	1.0E 0.3F 0.9E 0.8F	29 Tu	0256 0950 1502 2141	0637 1208 1841	1.4E 0.7F 1.2E	14 Th	0254 1009 1457 2149	0637 1220 1850	1.2E 0.5F 0.9E	29 F	0351 1107 1658 2332	0047 0746 1335 2019	0.7F 1.2E 0.7F 0.9E
15 Tu	0246 1010 1350 2117	0621 1156 1812	0.9E 1.2E 0.9E	30 W	0349 1051 1617 2250	0020 0734 1311 1945	0.9F 1.3E 0.7F 1.1E	15 F	0330 1050 1619 2253	0028 0721 1307 1947	0.7F 1.2E 0.6F 0.9E	30 Sa	0434 1158 1804	0139 0834 2128	0.5F 1.1E 0.7F 0.9E
				31 Th	0444 1150 1733	0118 0829 1418 2054	0.7F 1.2E 0.6F 1.0E								

Time meridian 75° W. 0000 is midnight. 1200 is noon.
 * Current weak and variable.

AUGUST

Time meridian 75° W. 0000 is midnight. 1200 is noon.
* Current weak and variable.

99

FR

SEPTEMBER

OCTOBER

Time meridian 75° W. 0000 is midnight, 1200 is noon.

* Current weak and variable.

F-Flood, Dir. 300° True E-Ebb, Dir. 129° True

DECEMBER

* Current weak and variable.

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

JANUARY

FEBRUARY

Day	Slack Water Time	Maximum Current Time Vel.	Day	Slack Water Time	Maximum Current Time Vel.	Day	Slack Water Time	Maximum Current Time Vel.	Day	Slack Water Time	Maximum Current Time Vel.
	h.m.	h.m. knots		h.m.	h.m. knots		h.m.	h.m. knots		h.m.	h.m. knots
1 M	0534 0826 1133 1658 2319	0203 0.9E 0.7F 1416 0.5E 2015 0.7F	16 Tu	0549 1228 1814 2349	0232 0.9E 0903 0.9F 1516 0.6E 2103 0.6F	1 Th	0547 1255 1919	0242 0.8E 0919 1.0F 1552 0.7E 2139 0.4F	16 F	0614 1332 2012	0317 0.6E 0952 0.9F 1634 0.7E 2224 0.3F
2 Tu	0503 1228 1808 2356	0240 0.9E 0909 0.8F 1514 0.6E 2108 0.6F	17 W	0627 1323 1924	0314 0.8E 0951 0.9F 1617 0.6E 2157 0.4F	2 F	0604 0628 1355 2040	0327 0.7E 1012 1.1F 1701 0.8E 2244 0.3F	17 Sa	0642 0655 1426	0402 0.5E 1043 0.9F 1737 0.7E 2329 *
3 W	0634 1326 1926	0321 0.8E 0956 0.9F 1618 0.6E 2201 0.5F	18 Th	0630 0705 1418 2039	0357 0.7E 1037 0.9F 1718 0.6E 2257 0.3F	3 Sa	0651 0716 1456	0419 0.7E 1108 1.1F 1808 0.8E 2354 *	18 Su	0741 1520	0455 0.5E 1136 0.9F 1838 0.7E
4 Th	0036 0710 1245 2050	0404 0.8E 1045 1.0F 1725 0.7E 2305 0.3F	19 F	0116 0745 1512 2157	0445 0.6E 1128 0.9F 1816 0.7E	4 Su	0810 1556 2309	0518 0.6E 1208 1.1F 1911 0.9E	19 M	0832 1613 2332	0537 * 1231 0.9F 1932 0.8E
5 F	0121 0751 1524 2214	0449 0.7E 1136 1.1F 1829 0.8E	20 Sa	0207 0827 1604	0534 0.6E 1218 1.0F 1915 0.7E	5 M	0304 0911 1654	0525 0.6E 1311 1.2F 2010 0.9E	20 Tu	0348 0927 1703	0648 0.4E 1325 0.9F 2023 0.8E
6 Sa	0212 0837 1620	0512 0.3F 1040 0.7E 1233 1.2F 1932 0.9E	21 Su	0911 1653	0624 0.5E 1309 1.0F 2012 0.8E	6 Tu	0405 0421 1016 1747	0213 0.3F 0733 0.6E 1409 1.2F 2104 1.0E	21 W	0451 1024 1749	0230 0.3F 0748 0.5E 1417 1.0F 2110 0.9E
7 Su	0928 1715	0119 * 0638 0.8E 1329 1.2F 2031 1.0E	22 M	0957 1739	0205 * 0718 0.5E 1358 1.0F 2101 0.9E	7 W	0500 0514 1120 1837	0308 0.4F 0838 0.6E 1508 1.1F 2153 1.0E	22 Th	0553 0547 1122 1833	0317 0.4F 0842 0.5E 1505 1.0F 2151 0.9E
8 M	0031 0422 1023 1806	0225 0.3F 0741 0.6E 1422 1.3F 2124 1.0E	23 Tu	0102 0510 1044 1823	0300 0.3F 0810 0.5E 1443 1.1F 2147 0.9E	8 Th	0130 0639 1223 1923	0358 0.5F 0938 0.7E 1557 1.1F 2238 1.0E	23 F	0124 0637 1218 1912	0358 0.5F 0934 0.6E 1552 1.0F 2225 0.9E
9 Tu	0122 0533 1120 1855	0321 0.3F 0841 0.6E 1515 1.3F 2215 1.1E	24 W	0144 0607 1133 1904	0349 0.3F 0902 0.5E 1528 1.1F 2226 1.0E	9 F	0208 0737 1322 2006	0447 0.7F 1035 0.7E 1648 1.1F 2321 1.0E	24 Sa	0152 0723 1313 1952	0435 0.6F 1023 0.7E 1635 1.0F 2301 0.9E
10 W	0206 0640 1219 1942	0416 0.4F 0943 0.6E 1609 1.3F 2300 1.1E	25 Th	0219 0659 1223 1944	0434 0.4F 0951 0.5E 1612 1.1F 2305 1.0E	10 Sa	0243 0830 1418 2046	0534 0.8F 1127 0.8E 1735 1.0F	25 Su	0219 0809 1407 2028	0510 0.8F 1109 0.8E 1718 0.9F 2337 0.9E
11 Th	0245 0743 1317 2027	0511 0.5F 1039 0.7E 1659 1.2F 2346 1.1E	26 F	0250 0748 1314 2023	0514 0.5F 1041 0.6E 1658 1.1F 2340 1.0E	11 Su	0318 0921 1512 2125	0600 1.0E 1216 0.8F 1820 0.9F	26 M	0246 0855 1502 2104	0550 0.9F 1157 0.9E 1804 0.8F
12 F	0323 0843 1415 2109	0601 0.6F 1135 0.7E 1748 1.1F	27 Sa	0319 0835 1406 2100	0551 0.6F 1126 0.8E 1741 1.0F	12 M	0352 1010 1606 2202	0658 0.9F 1305 0.7E 1906 0.7F	27 Tu	0315 0943 1559 2140	0627 1.0F 1246 0.9E 1847 0.7F
13 Sa	0400 0941 1512 2150	0627 1.1E 1044 0.7F 1229 0.7E 1836 1.0F	28 Su	0345 0922 1500 2136	0629 0.7F 1215 0.7E 1824 0.9F	13 Tu	0426 1059 1701 2239	0739 0.9F 1354 0.7E 1949 0.6F	28 W	0347 1034 1658 2217	0710 1.1F 1336 0.9E 1936 0.6F
14 Su	0436 1037 1611 2230	0110 1.1E 0730 0.8F 1324 0.7E 1925 0.9F	29 M	0412 1011 1557 2211	0707 0.8F 1305 0.7E 1905 0.8F	14 W	0500 1148 1758 2316	0821 0.9F 1443 0.7E 2037 0.5F			
15 M	0513 1133 1711 2309	0150 1.0E 0816 0.8F 1413 0.6E 2013 0.7F	30 Tu	0440 1102 1658 2246	0124 0.9E 0749 0.9F 1358 0.7E 1956 0.7F 2246	15 Th	0536 1239 1902 2356	0232 0.7E 0906 0.9F 1538 0.7E 2126 0.4F			
			31 W	0511 1157 1805 2323	0203 0.9E 0830 1.0F 1454 0.7E 2045 0.5F						

Time meridian 75° W. 0000 is midnight, 1200 is noon.
* Current weak and variable.

BALTIMORE HARBOR APPROACH (off Sandy Pt.), MARYLAND, 1990

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

MARCH

APRIL

Day	Slack Water			Day	Slack Water			Day	Slack Water			Day	Slack Water		
	Time	Current	Vel.		Time	Current	Vel.		Time	Current	Vel.		Time	Current	Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 Th	0424	0127	0.8E	16 F	0444	0156	0.6E	1 Su	0529	0246	0.6E	16 M	0015	0257	0.4E
	1127	0755	1.1F		1155	0822	0.9F		1252	0917	1.1F		0525	0920	0.8F
	1802	1431	0.9E		1845	1506	0.8E		1956	1609	0.9E		1251	1619	0.8E
	2258	2031	0.5F		2333	2106	0.4F			2220	0.4F		2013	2237	0.3F
2 F	0506	0210	0.7E	17 Sa	0523	0238	0.5E	2 M	0634	0350	0.5E	17 Tu	0117	0358	0.3E
	1224	0845	1.1F		1244	0907	0.9F		1353	1021	1.0F		0624	1017	0.8F
	1911	1533	0.9E		1948	1601	0.7E		2054	1712	0.9E		1343	1711	0.8E
	2345	2125	0.4F			2201	0.3F		2146	2324	0.5F		2058	2332	0.4F
3 Sa	0554	0301	0.7E	18 Su	0607	0327	0.4E	3 Tu	0749	0506	0.5E	18 W	0222	0503	0.4E
	1324	0942	1.1F		1337	0958	0.8F		1454	1130	0.9F		0734	1118	0.7F
	2022	1636	0.8E		2052	1656	0.7E		2146	1814	0.9E		1436	1802	0.7E
		2231	0.3F			2303	0.3F						2137		
4 Su	0650	0400	0.6E	19 M	0659	0418	0.4E	4 W	0909	0631	0.5F	19 Th	0321	0608	0.4E
	1426	1043	1.1F		1432	1055	0.8F		1553	0621	0.6E		0850	1215	0.7F
	2131	1743	0.8E		2150	1756	0.7E		2233	1234	0.8F		1528	1849	0.7E
		2342	0.3F							1909	0.8E		2211		
5 M	0755	0509	0.6E	20 Tu	0759	0526	0.4E	5 Th	1026	0729	0.6E	20 F	0415	0712	0.5E
	1528	1149	1.0F		1527	1153	0.8F		1649	1341	0.8F		1005	1316	0.6F
	2231	1845	0.9E		2238	1849	0.7E		2316	2002	0.8E		1618	1932	0.7E
6 Tu	0315	0051	0.4F	21 W	0336	0100	0.3F	6 F	0530	0221	0.8F	21 Sa	0505	0152	0.7F
	0907	0621	0.6E		0906	0628	0.4E		1135	0830	0.7E		1114	0808	0.7E
	1628	1253	1.0F		1619	1253	0.8F		1740	1439	0.8F		1705	1410	0.6F
	2322	1942	0.9E		2317	1942	0.8E		2355	2050	0.8E		2314	2014	0.7E
7 W	0430	0153	0.5F	22 Th	0435	0149	0.4F	7 Sa	0621	0307	0.9F	22 Su	0552	0235	0.9F
	1019	0732	0.6E		1012	0731	0.5E		1236	0926	0.8E		1217	0859	0.8E
	1723	1354	1.0F		1708	1348	0.8F		1827	1528	0.7F		1749	1501	0.6F
		2037	0.9E		2350	2025	0.8E			2131	0.8E		2346	2052	0.7E
8 Th	0536	0248	0.6F	23 F	0526	0236	0.6F	8 Su	0707	0350	1.0F	23 M	0638	0316	1.1F
	1128	0838	0.7E		1116	0825	0.6E		1332	1015	0.9E		1316	0949	1.0E
	1813	1455	1.0F		1753	1438	0.8F		1910	1621	0.7F		1831	1552	0.6F
		2126	0.9E			2105	0.8E			2213	0.8E			2134	0.8E
9 F	0633	0337	0.7F	24 Sa	0614	0314	0.7F	9 M	0750	0431	1.0F	24 Tu	0723	0357	1.2F
	1231	0936	0.8E		1217	0918	0.7E		1423	1100	0.9E		1412	1038	1.1E
	1859	1547	0.9F		1835	1527	0.8F		1950	1702	0.6F		1914	1639	0.6F
		2207	0.9E			2140	0.8E			2251	0.7E			2214	0.8E
10 Sa	0725	0422	0.8F	25 Su	0700	0355	0.8F	10 Tu	0831	0510	1.0F	25 W	0810	0439	1.3F
	1328	1027	0.8E		1314	1006	0.9E		1511	1143	1.0E		1505	1125	1.1E
	1941	1636	0.9F		1914	1615	0.8F		2029	1746	0.6F		1958	1728	0.5F
		2249	0.9E			2217	0.8E			2327	0.7E			2259	0.7E
11 Su	0812	0503	0.9F	26 M	0745	0431	1.0F	11 W	0911	0546	1.0F	26 Th	0857	0524	1.3F
	1421	1114	0.9E		1409	1053	1.0E		1559	1226	0.9E		1558	1214	1.2E
	2020	1719	0.8F		1953	1659	0.8F		2108	1829	0.5F		2046	1817	0.5F
		2328	0.9E			2255	0.8E							2344	0.7E
12 M	0857	0542	1.0F	27 Tu	0831	0513	1.1F	12 Th	0951	0606	0.6E	27 F	0945	0611	1.3F
	1512	1201	0.9E		1504	1139	1.0E		1648	0623	1.0F		1650	1305	1.2E
	2058	1804	0.7F		2031	1745	0.7F		2148	1307	0.9E		2139	1908	0.5F
						2332	0.8E			1912	0.5F				
13 Tu	0303	0003	0.8E	28 W	0318	0013	0.8E	13 F	0319	0041	0.5E	28 Sa	0314	0036	0.7E
	0940	0622	1.0F		0918	0638	1.2F		1032	0702	1.0F		1035	0702	1.3F
	1602	1244	0.9E		1600	1321	1.1E		1738	1352	0.9E		1742	1354	1.1E
	2134	1846	0.6F		2111	1831	0.6F		2231	1957	0.4F		2238	2005	0.5F
14 W	0336	0039	0.7E	29 Th	0301	0013	0.8E	14 Sa	0355	0123	0.5E	29 Su	0410	0133	0.6E
	1024	0700	1.0F		1008	0638	1.2F		1116	0743	0.9F		1127	0756	1.2F
	1653	1329	0.8E		1657	1321	1.1E		1830	1438	0.9E		1833	1449	1.1E
	2211	1928	0.5F		2154	1921	0.5F		2319	2050	0.3F		2345	2101	0.5F
15 Th	0409	0116	0.7E	30 F	0344	0058	0.7E	15 Su	0436	0205	0.4E	30 M	0513	0234	0.6E
	1108	0740	0.9F		1100	0725	1.2F		1202	0828	0.9F		1221	0853	1.0F
	1747	1418	0.8E		1756	1412	1.0E		1923	1527	0.8E		1924	1544	1.0E
	2250	2015	0.4F		2244	2015	0.5F			2141	0.3F			2204	0.6F
				31 Sa	0433	0149	0.7E								
					1154	0818	1.2F								
					1856	1509	1.0E								
					2342	2113	0.4F								

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

MAY												JUNE											
Slack Water				Maximum Current				Slack Water				Maximum Current				Slack Water				Maximum Current			
Day	Time	Vel.		Day	Time	Vel.		Day	Time	Vel.		Day	Time	Vel.		Day	Time	Vel.		Day	Time	Vel.	
	h.m.	knots			h.m.	knots			h.m.	knots			h.m.	knots			h.m.	knots			h.m.	knots	
1	0058	0.34E	0.5E	16	0104	0.33E	0.3E	1	0302	0.55E	0.6E	16	0230	0.52E	0.6E	16	0230	0.52E	0.6E	16	0230	0.52E	0.6E
Tu	0625	0.95E	0.9F	W	0601	0.93E	0.7F	F	0859	1.14E	0.5F	Sa	0828	1.10E	0.4F	Sa	0828	1.10E	0.4F	Sa	0828	1.10E	0.4F
	1317	1.640	0.9E		1256	1.623	0.8E		1423	1.748	0.8E		1337	1.703	0.7E		1337	1.703	0.7E		1337	1.703	0.7E
	2013	2.305	0.6F		2002	2.253	0.5F		2056				2010	2.345	0.9F		2010	2.345	0.9F		2010	2.345	0.9F
2	0212	0.50E	0.5E	17	0203	0.44E	0.4E	2		0.025	0.9F	17	0324	0.62E	0.7E	17	0324	0.62E	0.7E	17	0324	0.62E	0.7E
W	0746	1.104	0.7F	Th	0717	1.039	0.6F	Sa	0359	0.657	0.7E	Su	0952	1.205	0.3F	Su	0952	1.205	0.3F	Su	0952	1.205	0.3F
	1414	1.737	0.9E		1343	1.712	0.8E		1017	1.250	0.4E		1423	1.750	0.7E		1423	1.750	0.7E		1423	1.750	0.7E
	2100				2035	2.341	0.6F		1517	1.837	0.7E		2047				2047				2047		
									2138														
3		0.004	0.7F	18	0259	0.54E	0.5E	3		0.114	1.0F			0.034	1.1F	18		0.034	1.1F	18		0.034	1.1F
Th	0320	0.613	0.6E	F	0838	1.139	0.5F	Su	0451	0.757	0.8E	M	0417	0.727	0.8E	M	0417	0.727	0.8E	M	0417	0.727	0.8E
	0908	1.213	0.7F		1432	1.753	0.7E		1128	1.348	0.4F		1110	1.311	0.3F		1110	1.311	0.3F		1110	1.311	0.3F
	1511	1.833	0.8E		2107				1611	1.925	0.7E		1514	1.839	0.7E		1514	1.839	0.7E		1514	1.839	0.7E
	2144								2218				2130				2130				2130		
4		0.101	0.8F	19		0.024	0.8F	4		0.202	1.1F	19		0.125	1.2F	19		0.125	1.2F	19		0.125	1.2F
F	0421	0.720	0.7E	Sa	0352	0.649	0.6E	M	0538	0.848	0.9E	Tu	0509	0.822	0.9E	Tu	0509	0.822	0.9E	Tu	0509	0.822	0.9E
	1026	1.319	0.6F		0958	1.242	0.5F		1231	1.445	0.4F		1217	1.413	0.3F		1217	1.413	0.3F		1217	1.413	0.3F
	1606	1.922	0.8E		1520	1.839	0.7E		1704	2.013	0.6E		1611	1.932	0.7E		1611	1.932	0.7E		1611	1.932	0.7E
	2226				2140				2257				2216				2216				2216		
5		0.151	0.9F	20		0.113	0.9F	5		0.245	1.1F	20		0.215	1.3F	20		0.215	1.3F	20		0.215	1.3F
Sa	0514	0.818	0.8E	Su	0442	0.746	0.7E	Tu	0622	0.937	0.9E	W	0559	0.918	1.0E	W	0559	0.918	1.0E	W	0559	0.918	1.0E
	1136	1.418	0.6F		1112	1.341	0.4E		1326	1.536	0.4F		1314	1.510	0.3E		1314	1.510	0.3E		1314	1.510	0.3E
	1658	2.010	0.7E		1609	1.924	0.7E		1756	2.055	0.6E		1712	2.026	0.7E		1712	2.026	0.7E		1712	2.026	0.7E
	2305				2216				2335				2306				2306				2306		
6		0.236	1.0F	21		0.156	1.1F	6		0.327	1.1F	21		0.305	1.3F	21		0.305	1.3F	21		0.305	1.3F
Su	0602	0.911	0.9E	M	0530	0.841	0.9E	W	0702	1.023	1.0E	Th	0647	1.007	1.1E	Th	0647	1.007	1.1E	Th	0647	1.007	1.1E
	1237	1.512	0.5F		1218	1.436	0.4F		1416	1.625	0.4F		1403	1.605	0.4F		1403	1.605	0.4F		1403	1.605	0.4F
	1748	2.052	0.7E		1658	2.007	0.7E		1846	2.139	0.5E		1815	2.121	0.7E		1815	2.121	0.7E		1815	2.121	0.7E
	2343				2254								2359				2359				2359		
7		0.317	1.1F	22		0.242	1.2F	7		0.406	1.1F	22		0.356	1.4F	22		0.356	1.4F	22		0.356	1.4F
M	0646	1.000	0.9E	Tu	0617	0.931	1.0E	Th	0742	1.104	1.0E	F	0735	1.054	1.2E	F	0735	1.054	1.2E	F	0735	1.054	1.2E
	1331	1.557	0.5F		1318	1.528	0.4F		1501	1.712	0.4F		1447	1.659	0.4F		1447	1.659	0.4F		1447	1.659	0.4F
	1834	2.134	0.7E		1747	2.056	0.7E		1935	2.222	0.5E		1919	2.218	0.7E		1919	2.218	0.7E		1919	2.218	0.7E
					2336																		
8		0.019	1.1F	23		0.328	1.3F	8		0.445	1.1F	23		0.447	1.3F	23		0.447	1.3F	23		0.447	1.3F
Tu	0727	1.045	1.0E	W	0704	1.023	1.1E	F	0820	1.147	1.1E	Sa	0821	1.143	1.2E	Sa	0821	1.143	1.2E	Sa	0821	1.143	1.2E
	1422	1.648	0.5F		1412	1.622	0.4E		1544	1.756	0.4F		1528	1.750	0.5E		1528	1.750	0.5E		1528	1.750	0.5E
	1918	2.212	0.6E		1839	2.144	0.7E		2023	2.305	0.5E		2021	2.315	0.7E		2021	2.315	0.7E		2021	2.315	0.7E
9		0.053	1.1F	24		0.414	1.4F	9		0.527	1.1F	24		0.536	1.3F	24		0.536	1.3F	24		0.536	1.3F
W	0806	1.126	1.0E	Th	0751	1.110	1.2E	Sa	0858	1.225	1.1E	Su	0906	1.226	1.2E	Su	0906	1.226	1.2E	Su	0906	1.226	1.2E
	1510	1.729	0.4F		1502	1.713	0.5F		1624	1.838	0.4F		1608	1.839	0.6F		1608	1.839	0.6F		1608	1.839	0.6F
	2001	2.252	0.6E		1933	2.232	0.7E		2111	2.350	0.4E		2124				2124				2124		
10		0.127	1.1F	25		0.501	1.4E	10		0.609	1.1F	25		0.613	0.7E	25		0.613	0.7E	25		0.613	0.7E
Th	0845	1.207	1.0E	F	0838	1.157	1.2E	Su	0937	1.305	1.0E	M	0251	0.631	1.2F	M	0251	0.631	1.2F	M	0251	0.631	1.2F
	1556	1.814	0.4F		1549	1.804	0.5F		1701	1.920	0.4F		0951	1.310	1.1E		0951	1.310	1.1E		0951	1.310	1.1E
	2044	2.330	0.5E		2030	2.324	0.7E		2200				1647	1.928	0.7E		1647	1.928	0.7E		1647	1.928	0.7E
													2226				2226				2226		
11		0.201	1.1F	26		0.551	1.3F	11		0.033	0.4E	26		0.114	0.6E	26		0.114	0.6E	26		0.114	0.6E
F	0923	1.249	1.0E	Sa	0925	1.246	1.2E	M	0255	0.646	1.0F	Tu	0353	0.720	1.0F	Tu	0353	0.720	1.0F	Tu	0353	0.720	1.0F
	1641	1.857	0.4F		1635	1.857	0.5F		1015	1.342	1.0E		1035	1.356	1.1E		1035	1.356	1.1E		1035	1.356	1.1E
	2129				2131				1735	2.002	0.5F		1727	2.021	0.8F		1727	2.021	0.8F		1727	2.021	0.8F
									2250				2329				2329				2329		
12		0.011	0.4E	27		0.021	0.6E	12		0.124	0.4E	27		0.215	0.6E	27		0.215	0.6E	27		0.215	0.6E
Sa	0237	0.631	1.0F	Su	0257	0.644	1.2F	Tu	0345	0.733	0.9F	W	0458	0.815	0.8F	W	0458	0.815	0.8F	W	0458	0.815	0.8F
	1002	1.330	1.0E		1013	1.335	1.2E		1054	1.422	0.9E		1119	1.442	1.0E		1119	1.442	1.0E		1119	1.442	1.0E
	1726	1.943	0.4F		1719	1.952	0.6F		1806	2.044	0.5F		1806	2.113	0.9E		1806	2.113	0.9E		1806	2.113	0.9E
	2217				2235				2343														
13		0.054	0.4E	28		0.121	0.6E	13		0.218	0.4E	28		0.031	0.31E	28		0.031	0.31E	28		0.031	0.31E
Su	0317	0.711	1.0F	M	0357	0.739	1.1F	W	0443	0.816	0.8E	Th	0607	0.908	0.7F	Th	0						

BALTIMORE HARBOR APPROACH (off Sandy Pt.), MARYLAND, 1990

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

JULY

AUGUST

JULY				AUGUST			
Day	Slack Water Time	Maximum Current Time	Vel.	Day	Slack Water Time	Maximum Current Time	Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots
1 Su	0328 0959 1428 2051	0629 1214 1752	0.7E 0.3F 0.6E	16 W	0255 1140 1711	0559 1140 1711	0.7E * 0.7E
2 M	0420 1113 1524 2134	0727 1317 1845	1.0F 0.7E 0.3F 0.6E	17 Tu	0352 1247 1806	0002 0702 1247 1806	1.1F 0.8E * 0.6E
3 Tu	0509 1217 1623 2216	0125 0822 1416 1934	1.0F 0.8E 0.3F 0.5E	18 W	0447 1354 1909	0059 0803 1354 1909	1.2F 0.9E * 0.6E
4 W	0554 1311 1722 2259	0214 0911 1512 2023	1.1F 0.9E 0.3F 0.5E	19 Th	0540 1256 1658 2252	0154 0857 1452 2011	1.2F 1.0E 0.3F 0.6E
5 Th	0636 1358 1819 2342	0258 0958 1603 2112	1.1F 1.0E 0.3F 0.5E	20 F	0630 1339 1809 2353	0250 0948 1547 2112	1.3F 1.1E 0.4F 0.7E
6 F	0717 1439 1911	0340 1041 1648 2200	1.1F 1.0E 0.4F 0.5E	21 Sa	0718 1418 1914	0344 1035 1642 2212	1.3F 1.1E 0.5F 0.7E
7 Sa	0756 1516 2001	0422 1120 1729 2242	1.1F 1.0E 0.4F 0.5E	22 Su	0803 1455 2015	0434 1118 1731 2311	1.2F 1.1E 0.6F 0.7E
8 Su	0834 1549 2048	0503 1159 1812 2331	1.1F 1.1E 0.5F 0.5E	23 M	0846 1531 2113	0525 1201 1818	1.1F 1.1E 0.8F
9 M	0912 1620 2135	0546 1234 1851	1.0F 1.0E 0.5F	24 Tu	0928 1608 2209	0005 0614 1245 1902	0.7E 1.0F 1.1E 0.8F
10 Tu	0948 1648 2223	0617 1310 1927	0.5E 1.0E 0.6F	25 W	1009 1645 2304	0101 0703 1327 1950	0.7E 0.9F 1.0E 0.9F
11 W	1024 1714 2312	0709 1346 2005	0.9F 0.9E 0.7F	26 Th	1049 1722	0155 0753 1408 2036	0.7E 0.7F 0.9E 0.9F
12 Th	1059 1742	0756 1421 2047	0.7F 0.9E 0.8F	27 F	1129 1801	0251 0845 1451 2125	0.7E 0.6F 0.8E 0.9F
13 F	1134 1811	0845 1457 2129	0.6E 0.6F 0.8E 0.9F	28 Sa	1211 1841	0348 0935 1534 2211	0.7E 0.5F 0.7E 0.9F
14 Sa	1211 1844	0934 1535 2218	0.5F 0.8E 1.0F	29 Su	1256 1922	0450 1036 1622 2304	0.7E 0.3F 0.6E 0.9F
15 Su	1251 1922	1037 1620 2307	0.3F 0.7E 1.0F	30 M	1349 2006	0553 1140 1711 2357	0.7E 0.3F 0.6E 1.0F
				31 Tu	1444 1807	0655 1244 1807	0.7E * 0.5E
					2053		
1 W	0433 1348 1903	0049 0751 1348 1903	1.0F 0.8E * 0.5E	16 Th	0423 1132 1547 2146	0037 0739 1336 1901	1.1F 0.9E 0.3F 0.6E
2 Th	0521 1240 1659 2232	0141 0844 1445 1959	1.0F 0.8E 0.3F 0.5E	17 F	0518 1219 1703 2253	0142 0834 1439 2007	1.1F 0.9E 0.4F 0.6E
3 F	0606 1323 1757 2323	0230 0927 1534 2048	1.0F 0.9E 0.3F 0.5E	18 Sa	0610 1259 1809 2359	0239 0924 1528 2112	1.1F 1.0E 0.5F 0.7E
4 Sa	0648 1359 1849	0315 1009 1616 2140	1.0F 1.0E 0.4F 0.5E	19 Su	0657 1337 1909	0334 1011 1620 2209	1.1F 1.0E 0.7F 0.8E
5 Su	0729 1430 1936	0401 1048 1658 2225	1.1F 1.0E 0.5F 0.6E	20 M	0742 1413 2004	0425 1052 1705 2304	1.0F 1.0E 0.8F 0.8E
6 M	0807 1459 2022	0443 1123 1733 2314	1.0F 1.0E 0.6F 0.6E	21 Tu	0824 1448 2056	0514 1133 1748 2354	1.0F 1.0E 0.9F 0.8E
7 Tu	0844 1525 2106	0526 1200 1812 2106	1.0F 1.0E 0.7F	22 W	0904 1523 2145	0600 1214 1833	0.9F 1.0E 0.9F
8 W	0919 1551 2152	0607 1232 1848	0.9F 0.9E 0.8F	23 Th	0943 1559 2235	0646 1254 1914	0.8F 0.9E 1.0F
9 Th	0953 1618 2240	0650 1305 1924	0.8F 0.9E 0.9F	24 F	1021 1635 2324	0732 1333 1957	0.6F 0.8E 1.0F
10 F	1027 1647 2331	0733 1340 2005	0.7F 0.8E 0.9F	25 Sa	1100 1712	0820 1412 2043	0.5F 0.7E 0.9F
11 Sa	1101 1720	0822 1419 2050	0.5F 0.8E 1.0F	26 Su	1141 1752	0909 1456 2129	0.4F 0.6E 0.9F
12 Su	1138 1759	0914 1500 2141	0.4F 0.7E 1.1F	27 M	1229 1835	1007 1543 2221	0.3F 0.5E 0.9F
13 M	1222 1844	1011 1549 2234	0.3F 0.7E 1.1F	28 Tu	1292 1923	1109 1638 2315	0.3F 0.5E 0.9F
14 Tu	1220 1647 2334	1120 1647 2334	* 0.6E 1.1F	29 W	1309 1430 2016	1215 1736	0.7E 0.3F 0.4E
15 W	1228 1752	1228 1752	* 0.6E	30 Th	1317 1539 2114	1317 1837	0.3F 0.4E
				31 F	1442 1152 1642 2213	0804 1412 1938	0.8E 0.4F 0.5E

Time meridian 75° W. 0000 is midnight. 1200 is noon.
* Current weak and variable.

512

E-Ebb, Dir. 190° True

OCTOBER

Time meridian 75° W. 0000 is midnight. 1200 is noon.

BALTIMORE HARBOR APPROACH (off Sandy Pt.), MARYLAND, 1990

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

NOVEMBER

DECEMBER

Slack Water				Maximum Current				Slack Water				Maximum Current			
Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.
	h.m.	knots			h.m.	knots			h.m.	knots			h.m.	knots	
1 Th	0101 0607 1156 1904	0333 0912 1536 2219	0.5F 0.7E 1.2F 1.0E	16 F	0209 0657 1231 1950	0429 0953 1618 2309	0.4F 0.6E 1.1F 1.0E	1 Sa	0155 0610 1155 1929	0359 0916 1551 2249	0.4F 0.7E 1.4F 1.2E	16 Su	0247 0719 1236 2006	0457 1005 1632 2330	0.4F 0.5E 1.1F 1.1E
2 F	0157 0650 1233 1949	0419 0953 1618 2304	0.5F 0.7E 1.3F 1.1E	17 Sa	0258 0743 1308 2030	0514 1035 1658 2352	0.4F 0.6E 1.1F 1.0E	2 Su	0244 0704 1243 2016	0450 1005 1638 2334	0.4F 0.7E 1.4F 1.2E	17 M	0328 0810 1317 2044	0543 1052 1711	0.4F 0.5E 1.1F
3 Sa	0250 0734 1313 2035	0508 1035 1701 2353	0.5F 0.7E 1.3F 1.2E	18 Su	0343 0829 1345 2108	0558 1117 1737	0.4F 0.5E 1.1F	3 M	0329 0802 1335 2102	0539 1058 1727	0.5F 0.7E 1.4F	18 Tu	0407 0859 1359 2121	0909 0626 1135 1753	1.1E 0.4F 0.4E 1.0F
4 Su	0340 0821 1357 2121	0557 1119 1746	0.5F 0.7E 1.3F	19 M	0427 0916 1422 2147	0633 0644 1159 1818	1.0E 0.4F 0.4E 1.0F	4 Tu	0412 0902 1430 2148	0632 1154 1817	1.2E 0.5F 0.6E 1.3F	19 W	0442 0947 1444 2159	0707 1222 1835	1.0E 0.4F 0.4E 1.0F
5 M	0430 0912 1445 2209	0641 0646 1208 1835	1.2E 0.5F 0.7E 1.3F	20 Tu	0509 1005 1503 2226	0110 0727 1241 1855	1.0E 0.4F 0.4E 1.0F	5 W	0454 1006 1530 2235	0723 1253 1910	1.2E 0.6F 0.6E 1.1F	20 Th	0516 1037 1533 2236	0745 1309 1918	1.0E 0.5F 0.4E 0.9F
6 Tu	0519 1010 1540 2259	0739 1304 1928	1.1E 0.5F 0.6E 1.2F	21 W	0550 1058 1548 2307	0156 0815 1330 1943	1.0E 0.4F 0.4E 0.9F	6 Th	0536 1112 1635 2322	0156 0818 1356 2005	1.1E 0.7F 0.6E 1.0F	21 F	0547 1127 1628 2314	0203 0827 1358 1959	1.0E 0.5F 0.4E 0.8F
7 W	0607 1115 1641 2351	0837 1405 2024	1.1E 0.5F 0.6E 1.1F	22 Th	0629 1153 1641 2349	0237 0900 1421 2024	0.9E 0.4F 0.3E 0.8F	7 F	0617 1219 1747	0244 0910 2106	1.1E 0.7F 0.6E 0.8F	22 Sa	0616 1219 1731 2352	0240 0909 1456 2048	0.9E 0.6F 0.4E 0.7F
8 Th	0654 1227 1752	0933 1513 2125	1.0E 0.6F 0.5E 0.9F	23 F	0706 1250 1743	0319 0949 1520 2121	0.9E 0.5F 0.3E 0.7F	8 Sa	0011 0700 1326 1906	0336 1007 1614 2206	1.0E 0.8F 0.6E 0.7F	23 Su	0645 1313 1842	0951 1555 2142	0.8E 0.7F 0.5E 0.5F
9 F	0044 0741 1339 1911	0407 1034 1627 2230	1.0E 0.7F 0.5E 0.8F	24 Sa	0033 0741 1347 1856	0403 1036 1623 2216	0.8E 0.6E 0.4E 0.6F	9 Su	0101 0743 1431 2028	0424 1102 1725 2311	0.9E 0.9F 0.6E 0.5F	24 M	0030 0714 1407 2002	0358 1033 1656 2239	0.8E 0.8F 0.5E 0.4F
10 Sa	0140 0827 1449 2036	0502 1131 1740 2339	0.9E 0.8F 0.6E 0.7F	25 Su	0118 0813 1442 2016	0449 1118 1725 2315	0.8E 0.7F 0.5E 0.5F	10 M	0152 0826 1531 2150	0518 1155 1827	0.8E 1.0F 0.7E	25 Tu	0110 0746 1501 2125	0438 1123 1800 2338	0.7E 0.9F 0.6E 0.3F
11 Su	0236 0911 1552 2158	0557 1227 1849	0.8E 0.9F 0.7E	26 M	0205 0844 1534 2136	0530 1207 1827	0.7E 0.8F 0.6E	11 Tu	0246 0909 1627 2306	0607 1249 1930	0.4F 0.7E 1.0F 0.8E	26 W	0153 0822 1554	0521 1208 1901	0.7E 1.0F 0.7E
12 M	0332 0954 1649 2313	0646 0651 1319 1952	0.6F 0.8E 1.0F 0.8E	27 Tu	0252 0917 1623 2252	0015 0613 1250 1927	0.4F 0.7E 0.9F 0.7E	12 W	0341 0952 1717	0122 0701 1340 2029	0.4F 0.7E 1.1F 0.9E	27 Th	0903 1646	0042 0610 1257 2000	* 0.6E 1.1F 0.8E
13 Tu	0427 1036 1740	0148 0740 1409 2050	0.5F 0.7E 1.0F 0.9E	28 W	0340 0951 1711	0116 0657 1333 2019	0.4F 0.7E 1.0F 0.8E	13 Th	0013 0438 1034 1804	0223 0750 1423 2120	0.3F 0.6E 1.1F 0.9E	28 F	0949 1736	0145 0704 1348 2054	* 0.6E 1.2F 1.0E
14 W	0018 0519 1116 1826	0246 0827 1454 2139	0.5F 0.7E 1.1F 0.9E	29 Th	0001 0428 1029 1757	0211 0743 1419 2114	0.4F 0.7E 1.2F 1.0E	14 F	0111 0533 1115 1847	0317 0839 1509 2203	0.3F 0.6E 1.1F 1.0E	29 Sa	0055 0439 1039 1824	0244 0758 1439 2144	0.3F 0.6E 1.3F 1.1E
15 Th	0117 0609 1154 1909	0340 0911 1537 2226	0.5F 0.6E 1.1F 1.0E	30 F	0101 0518 1110 1844	0308 0829 1505 2200	0.4F 0.7E 1.3F 1.1E	15 Sa	0202 0627 1156 1927	0412 0924 1553 2249	0.3F 0.5E 1.1F 1.0E	30 Su	0143 0544 1133 1911	0340 0852 1531 2229	0.3F 0.6E 1.3F 1.1E
												31 M	0225 0649 1229 1957	0431 0951 1623 2315	0.4F 0.7E 1.3F 1.2E

Time meridian 75° W. 0000 is midnight. 1200 is noon.
* Current weak and variable.

CHESAPEAKE AND DELAWARE CANAL (Chesapeake City), 1990

107

F-Flood, Dir. 110° True E-Ebb, Dir. 290° True

JANUARY						FEBRUARY					
Day	Slack Water Time	Maximum Current Time Vel.	Day	Slack Water Time	Maximum Current Time Vel.	Day	Slack Water Time	Maximum Current Time Vel.	Day	Slack Water Time	Maximum Current Time Vel.
	h.m.	h.m. knots		h.m.	h.m. knots		h.m.	h.m. knots		h.m.	h.m. knots
1 M	0041 0600 1204 1843	0322 1.6E 0949 1.8F 1530 2.1E 2227 2.1F	16 Tu	0131 0801 1334 1959	0426 1.8E 1045 1.9F 1636 1.8E 2306 2.0F	1 Th	0112 0804 1418 1934	0435 2.1E 1127 2.0F 1701 1.6E 2333 1.9F	16 F	0133 0839 1451 2002	0500 2.0E 1150 2.0F 1728 1.5E 2355 1.8F
2 Tu	0114 0702 1304 1921	0412 1.8E 1045 1.8F 1621 2.0E 2310 2.0F	17 W	0159 0849 1429 2028	0504 1.9E 1136 1.9F 1720 1.6E 2349 1.9F	2 F	0156 0914 1535 2020	0529 2.2E 1227 2.0F 1801 1.4E 2020	17 Sa	0213 0928 1545 2038	0545 2.0E 1239 1.9F 1817 1.4E 2038
3 W	0151 0811 1412 2003	0501 1.9E 1143 1.9F 1718 1.8E 2003	18 Th	0230 0938 1528 2059	0547 1.9E 1227 1.9F 1808 1.5E 2059	3 Sa	0247 1029 1700 2115	0624 1.8F 1330 2.0F 1907 1.2E 2115	18 Su	0257 1023 1644 2122	0633 2.1E 1333 1.9F 1905 1.3E 2122
4 Th	0233 0925 1529 2050	0555 2.0F 1243 1.9F 1818 1.6E 2050	19 F	0306 1028 1629 2135	0633 1.9F 1318 1.9F 1856 1.4E 2135	4 Su	0345 1142 1824 2230	0732 2.2E 1432 2.1F 2015 1.1E 2230	19 M	0347 1122 1745 2214	0728 2.1E 1428 1.9F 2002 1.2E 2214
5 F	0319 1041 1656 2143	0652 2.2E 1347 2.0F 1924 1.4E 2143	20 Sa	0348 1121 1732 2218	0720 2.1E 1412 1.9F 1951 1.3E 2218	5 M	0449 1250 1935	0838 2.3E 1535 2.1F 2123 1.2E	20 Tu	0440 1221 1845 2315	0821 2.1E 1519 2.0F 2057 1.3E 2315
6 Sa	0411 1154 1825 2246	0753 2.3E 1451 2.1F 2032 1.3E 2246	21 Su	0433 1214 1834 2307	0811 2.1E 1505 2.0F 2043 1.3E 2307	6 Tu	0557 1352 2033	0942 2.3E 1633 2.1F 2229 1.3E	21 W	0536 1315 1937	0918 2.1E 1613 2.0F 2153 1.3E
7 Su	0508 1301 1945	0246 1.9F 0855 2.3E 1552 2.2F 2138 1.2E	22 M	0521 1306 1932 2358	0902 2.2E 1556 2.0F 2137 1.3E 2358	7 W	0130 0705 1448 2121	0427 1.9F 1044 2.3E 1728 2.2F 2331 1.4E	22 Th	0020 0633 1405 2022	0413 1.8F 1011 2.2E 1704 2.1F 2245 1.5E
8 M	0608 1403 2051	0344 1.9F 0955 2.4E 1651 2.2F 2242 1.3E	23 Tu	0611 1355 2025	0952 2.2E 1646 2.1F 2230 1.3E	8 Th	0237 0810 1538 2203	0524 2.0F 1140 2.3E 1819 2.2F 2203	23 F	0124 0730 1450 2101	0504 1.9F 1102 2.2E 1752 2.1F 2336 1.6E
9 Tu	0121 0709 1501 2147	0441 1.9F 1056 2.4E 1747 2.3F 2343 1.3E	24 W	0651 1442 2111	0440 1.8F 1043 2.3E 1735 2.1F 2318 1.3E	9 F	0335 0909 1624 2240	0023 1.6E 0619 2.0F 1231 2.2E 1904 2.2F	24 Sa	0224 0827 1531 2135	0555 2.0F 1154 2.2E 1836 2.1F 2135
10 W	0234 0810 1555 2236	0539 1.9F 1153 2.4E 1840 2.3F 2236	25 Th	0743 1524 2152	0527 1.8F 1128 2.3E 1824 2.2F	10 Sa	0427 1003 1706 2312	0109 1.7E 0708 2.0F 1319 2.2E 1947 2.2F	25 Su	0318 0924 1609 2207	0646 2.1F 1240 2.2E 1919 2.1F 2207
11 Th	0338 0908 1645 2320	0633 2.0F 1247 2.4E 1929 2.3F 2320	26 F	0233 0837 1603 2226	0616 1.9F 1215 2.3E 1907 2.2F 2226	11 Su	0514 1054 1744 2341	0147 1.8E 0759 2.1F 1401 2.1E 2027 2.1F	26 M	0411 1021 1645 2240	0739 2.1F 1329 2.1E 2002 2.1F 2240
12 F	0437 1004 1731 2359	0130 1.5E 0726 2.0F 1337 2.3E 2016 2.3F	27 Sa	0323 0926 1639 2257	0705 1.9F 1300 2.3E 1950 2.2F 2257	12 M	0558 1142 1818	0229 1.9E 0845 2.1F 1441 2.0E 2108 2.1F	27 Tu	0503 1118 1720 2315	0828 2.2F 1417 2.0E 2045 2.1F 2315
13 Sa	0531 1057 1813	0217 1.6E 0816 2.0F 1421 2.2E 2059 2.2F	28 Su	0414 1017 1712 2327	0134 1.7E 0753 1.9F 1345 2.2E 2033 2.2F	13 Tu	0638 1228 1847	0304 1.9E 0929 2.0F 1524 1.8E 2146 2.0F	28 W	0556 1218 1755 2354	0921 2.2F 1505 1.8E 2130 2.0F 2354
14 Su	0623 1149 1852	0300 1.7E 0908 1.9F 1507 2.1E 2142 2.2F	29 M	0506 1111 1744 2358	0842 2.0F 1428 2.1E 2115 2.1F 2358	14 W	0717 1314 1911	0340 2.0E 1016 2.0F 1602 1.7E 2225 1.9F	15 Th	0100 0756 1401 1934	0419 2.0E 1101 2.0F 1645 1.6E 2308 1.8F
15 M	0713 1241 1927	0343 1.7E 0957 1.9F 1550 1.9E 2225 2.1F	30 Tu	0602 1208 1818	0935 2.0F 1517 2.0E 2158 2.1F	15 Th	0756 1401 1934	1101 2.0F 1645 1.6E 2308 1.8F	16 F	0133 0839 1451 2002	0500 2.0E 1150 2.0F 1728 1.5E 2355 1.8F
			31 W	0700 1310 1854	1030 2.0F 1605 1.8E 2244 2.0F						

Time meridian 75° W. 0000 is midnight, 1200 is noon.

CHESAPEAKE AND DELAWARE CANAL (Chesapeake City), 1990

F-Flood, Dir. 110° True E-Ebb, Dir. 290° True

MARCH

APRIL

Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current		
Time			Time Vel.			Time			Time Vel.			Time			Time Vel.		
Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots
1			16			1			16			1			16		
Th	0653	2.3E	F	0008	2.1E	Su	0105	2.2E	M	0045	2.1E	Th	0653	2.3E	F	0008	2.1E
	1320	2.2F		0708	2.1F		0850	2.1F		0748	2.0F		1320	2.2F		0708	2.1F
	1832	1.6E		1336	1.5E		1537	1.3E		1437	1.7E		1832	1.6E		1336	1.5E
		1.9F		1849	1.7F		2022	1.7F		1926	1.6F			1.9F		1849	1.7F
2			17			2			17			2			17		
F	0037	2.3E	Sa	0044	2.1E	M	0208	2.1E	Tu	0134	2.1E	F	0037	2.3E	Sa	0044	2.1E
	0754	2.2F		0747	2.0F		0958	2.1F		0836	2.0F		0754	2.2F		0747	2.0F
	1427	1.5E		1419	1.4E		1640	1.3E		1523	1.4E		1427	1.5E		1419	1.4E
	1914	1.8F		1918	1.7F		2155			2021			1914	1.8F		1918	1.7F
3			18			3			18			3			18		
Sa	0127	2.3E	Su	0126	2.1E	Tu	0319	1.7F	W	0230	1.6F	Sa	0127	2.3E	Su	0126	2.1E
	0902	2.1F		0833	2.0F		1104	2.0E		0928	2.0F		0902	2.1F		0833	2.0F
	1541	1.3E		1507	1.4E		1737	1.4E		1611	1.5E		1541	1.3E		1507	1.4E
	2006			1956			2320			2127			2006			1956	
4			19			4			19			4			19		
Su	0223	1.8F	M	0213	1.6F	W	0438	1.7F	Th	0334	1.6F	Su	0223	1.8F	M	0213	1.6F
	1015	2.2E		0926	2.1E		1206	1.9E		1024	2.0E		1015	2.2E		0926	2.1E
	1657	2.0F		1600	1.9F		1826	2.0F		1658	1.6E		1657	2.0F		1600	1.9F
	2116	1.2E		2044	1.3E			1.5E		2242	1.6E		2116	1.2E		2044	1.3E
5			20			5			20			5			20		
M	0328	1.7F	Tu	0305	1.6F	Th	0528	1.8F	F	0444	1.8F	M	0328	1.7F	Tu	0305	1.6F
	1127	2.2E		1024	2.1E		0910	1.9E		0805	1.9E		1127	2.2E		1024	2.1E
	1808	2.0F		1656	1.9F		1301	2.0F		1122	2.0F		1808	2.0F		1656	1.9F
	2257	1.2E		2143	1.3E		1909	1.7E		1742	1.8E		2257	1.2E		2143	1.3E
6			21			6			21			6			21		
Tu	0440	1.8F	W	0404	1.7F	F	0126	1.9F	Sa	0558	1.9E	Tu	0440	1.8F	W	0404	1.7F
	1233	2.1E		1125	2.0E		0710	1.9E		0625	2.0F		1233	2.1E		1125	2.0E
	1908	2.0F		1751	2.0F		1351	2.0F		1219	2.0F		1908	2.0F		1751	2.0F
		1.3E		2252	1.4E		1947	1.9E		1825	2.0E			1.3E		2252	1.4E
7			22			7			22			7			22		
W	0026	1.8F	Th	0506	1.7F	Sa	0217	2.0F	Su	0102	2.1F	W	0026	1.8F	Th	0506	1.7F
	0556	2.1E		0844	2.1E		0813	1.8E		0713	1.8E		0556	2.1E		0844	2.1E
	1332	2.1F		1224	2.0F		1438	2.0F		1314	2.0F		1332	2.1F		1224	2.0F
	1958	1.4E		1840	1.5E		2021	2.0E		1908	2.2E		1958	1.4E		1840	1.5E
8			23			8			23			8			23		
Th	0135	1.9F	F	0005	1.9F	Su	0302	2.1F	M	0201	2.3F	Th	0135	1.9F	F	0005	1.9F
	0708	2.1E		0612	2.1E		0908	1.8E		0825	1.8E		0708	2.1E		0612	2.1E
	1425	2.1F		1317	2.0F		1520	2.0F		1406	2.0F		1425	2.1F		1317	2.0F
	2040	1.6E		1923	1.7E		2052			1950	2.3E		2040	1.6E		1923	1.7E
9			24			9			24			9			24		
F	0232	2.0F	Sa	0114	2.0F	M	0343	2.1E	Tu	0256	2.4F	F	0232	2.0F	Sa	0114	2.0F
	0813	2.1E		0719	2.1E		0957	2.2F		0933	1.7E		0813	2.1E		0719	2.1E
	1512	2.1F		1406	2.1F		1600	1.8E		1456	2.0F		1512	2.1F		1406	2.1F
	2117	1.8E		2002	1.9E		2121			2033			2117	1.8E		2002	1.9E
10			25			10			25			10			25		
Sa	0323	2.1F	Su	0214	2.1F	Tu	0420	2.1E	W	0350	2.5E	Sa	0323	2.1F	Su	0214	2.1F
	0911	2.0E		0824	2.0E		1042	2.2F		1036	2.4F		0911	2.0E		0824	2.0E
	1556	2.1F		1452	2.1F		1635	1.9F		1544	1.7E		1556	2.1F		1452	2.1F
	2149			2040	2.1E		2149			2118	1.9F		2149			2040	2.1E
11			26			11			26			11			26		
Su	0408	1.9E	M	0309	2.2F	W	0455	2.2E	Th	0443	2.5E	Su	0408	1.9E	M	0309	2.2F
	1002	2.1F		0927	2.0E		1122	2.3F		1136	2.5F		1002	2.1F		0927	2.0E
	1635	2.0E		1535	2.1F		1705	1.8F		1632	1.6E		1635	2.0E		1535	2.1F
	2218	2.1F		2117	2.1F		2218			2206	1.9F		2218	2.1F		2117	2.1F
12			27			12			27			12			27		
M	0449	2.0E	Tu	0401	2.2E	Th	0526	2.2E	F	0538	2.4F	M	0449	2.0E	Tu	0401	2.2E
	0737	2.2F		0721	2.3F		1201	2.2F		1235	1.9E		0737	2.2F		0721	2.3F
	1050	1.9E		1029	1.9E		1427	1.6E		1444	1.8F		1050	1.9E		1029	1.9E
	1711	2.0F		1615	2.0F		1728	1.8F		1723	1.8F		1711	2.0F		1615	2.0F
	2244			2155			2249			2257			2244			2155	
13			28			13			28			13			28		
Tu	0526	2.0E	W	0453	2.3E	F	0557	2.2E	Sa	0635	2.4E	Tu	0526	2.0E	W	0453	2.3E
	1133	2.2F		1129	2.4F		1238	2.2F		0943	2.4F		1133	2.2F		1129	2.4F
	1743	1.8E		1655	1.8E		1746	1.5E		1538	1.4E		1743	1.8E		1655	1.8E
	2309	2.0F		2237	2.0F		2324	1.7F		1820	1.8F		2309	2.0F		2237	2.0F
14			29			14			29			14			29		
W	0600	2.1E	Th	0547	2.4E	Sa	0630	2.2E	Su	0733	2.3E	W	0600	2.1E	Th	0547	2.4E
	1215	2.2F		1229	2.4F		1315	2.1F		1427	2.3F		1215	2.2F		1229	2.4F
	1808	1.7E		1735	1.6E		1810	1.5E		1931	1.4E		1808	1.7E		1735	1.6E
	2337	1.9F		2321	1.9F			1.6F			1.7F		2337	1.9F		2321	1.9F
15			30			15			30			15			30		
Th	0633	2.1E	F	0643	2.4E	Su	0002	2.1E	M	0051	2.2E	Th	0633	2.1E	F	0643	2.4E
	1255	2.1F		1330	2.3F		0707	2.1F		0833	2.2F		1255	2.1F		1330	2.3F
	1827	1.6E		1819	1.5E		1354	1.4E		1520	1.4E		1827	1.6E		1819	1.5E
		1.8F			1.8F		1843	1.6F		2051	1.7F			1.8F			1.8F
			31														
			Sa	0010	2.3E												
				0744	2.2F												
				1433	1.4E												
				1911	1.8F												

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 110° True E-Ebb, Dir. 290° True

MAY												JUNE											
Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current		
Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.
	h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots
1	0158	0535	2.0E	16	0104	0435	2.1E		1	0116	1.8F	16	0301	0036	1.8F								
Tu	0932	1225	2.1F	W	0754	1150	2.1F		F	0423	0706	1.6E	Sa	0604	0604	1.7E							
	1609	1831	1.5E		1446	1729	1.6E			1036	1333	2.0F		0843	1250	2.0F							
	2208				2010					1639	1947	1.9E		1523	1847	2.1E							
2		0039	1.7F	17		0001	1.6F		2		0213	1.9F	17		0139	1.9F							
W	0314	0637	1.9E	Th	0204	0530	2.0E		Sa	0539	0807	1.5E	Su	0422	0706	1.6E							
	1031	1321	2.0F		0840	1239	2.0F			1124	1420	2.0F		0933	1341	2.0F							
	1654	1931	1.6E		1527	1824	1.7E			1715	2035	2.1E		1607	1943	2.3E							
	2315				2120									2329									
3		0140	1.8F	18		0059	1.7F		3	0035	0308	2.0F	18		0240	2.1F							
Th	0435	0743	1.8E	F	0313	0631	1.9E		Su	0646	0901	1.4E	M	0549	0815	1.4E							
	1126	1410	2.0F		0930	1327	2.0F			1213	1507	1.9F		1027	1434	1.9F							
	1735	2025	1.8E		1608	1917	1.9E			1751	2118	2.1E		1655	2039	2.4E							
					2234																		
4	0014	0239	1.8F	19		0202	1.8F		4	0120	0357	2.1F	19	0034	0341	2.2F							
F	0554	0840	1.7E	Sa	0429	0735	1.8E		M	0746	0952	1.4E	Tu	0715	0921	1.3E							
	1219	1500	2.0F		1023	1418	2.0F			1301	1553	1.9F		1128	1530	1.9F							
	1813	2115	1.9E		1651	2014	2.1E			1828	2201	2.2E		1747	2138	2.5E							
5	0105	0335	2.0F	20		0302	2.0F		5	0203	0446	2.2F	20	0135	0439	2.3F							
Sa	0704	0940	1.6E	Su	0551	0840	1.7E		Tu	0839	1043	1.4E	W	0831	1024	1.3E							
	1308	1545	2.0F		1120	1509	2.0F			1347	1639	1.8F		1236	1627	1.9F							
	1849	2203	2.0E		1735	2106	2.2E			1906	2245	2.3E		1841	2235	2.5E							
6	0152	0428	2.1F	21	0047	0400	2.2F		6	0244	0534	2.2F	21	0235	0536	2.4F							
Su	0804	1033	1.6E	M	0713	0943	1.6E		W	0926	1128	1.4E	Th	0937	1127	1.3E							
	1354	1632	1.9F		1219	1602	1.9F			1429	1725	1.8F		1349	1722	1.9F							
	1923	2244	2.1E		1822	2201	2.4E			1944	2328	2.3E		1938	2331	2.5E							
7	0234	0517	2.2F	22	0147	0459	2.3F		7	0323	0617	2.3F	22	0332	0631	2.4F							
M	0858	1118	1.6E	Tu	0829	1046	1.5E		Th	1010	1211	1.4E	F	1035	1226	1.3E							
	1438	1718	1.9F		1318	1653	1.9F			1506	1809	1.8F		1503	1819	1.9F							
	1956	2321	2.2E		1910	2256	2.5E			2022				2036									
8	0314	0600	2.2F	23	0244	0554	2.4F		8		0008	2.3E	23		0029	2.5E							
Tu	0945	1201	1.5E	W	0937	1144	1.5E		F	0400	0702	2.3F	Sa	0427	0724	2.4F							
	1519	1759	1.9F		1417	1747	1.9F			1051	1254	1.3E		1126	1323	1.4E							
	2028				2000	2349	2.5E			1538	1852	1.7F		1615	1915	1.9F							
										2100				2135									
9		0002	2.2E	24	0340	0649	2.5F		9		0047	2.3E	24		0121	2.5E							
W	0351	0645	2.3F	Th	1040	1241	1.4E		Sa	0435	0745	2.2F	Su	0519	0816	2.4F							
	1029	1244	1.5E		1516	1836	1.9F			1129	1333	1.3E		1211	1418	1.5E							
	1554	1842	1.8F		2052					1606	1935	1.7F		1724	2011	1.9F							
	2101									2139				2234									
10		0039	2.3E	25		0041	2.6E		10		0126	2.3E	25		0215	2.3E							
Th	0426	0728	2.3F	F	0435	0741	2.5F		Su	0507	0828	2.2F	M	0608	0905	2.3F							
	1109	1322	1.5E		1137	1337	1.4E			1203	1414	1.4E		1253	1511	1.6E							
	1624	1923	1.7F		1617	1931	1.9F			1638	2018	1.6F		1829	2106	1.8F							
	2135				2145					2219				2334									
11		0115	2.2E	26		0136	2.5E		11		0203	2.2E	26		0306	2.2E							
F	0458	0810	2.3F	Sa	0530	0835	2.4F		M	0537	0909	2.2F	Tu	0654	0951	2.3F							
	1146	1400	1.4E		1230	1432	1.4E			1234	1455	1.4E		1330	1559	1.7E							
	1646	2006	1.7F		1721	2027	1.8F			1717	2101	1.6F		1932	2202	1.8F							
	2210				2241					2302													
12		0152	2.2E	27		0229	2.4E		12		0242	2.2E	27	0036	0357	2.0E							
Sa	0530	0852	2.2F	Su	0624	0927	2.4F		Tu	0608	0950	2.2F	W	0737	1037	2.2F							
	1222	1438	1.4E		1320	1527	1.4E			1303	1536	1.5E		1405	1648	1.8E							
	1708	2047	1.6F		1830	2122	1.8F			1805	2150	1.6F		2031	2257	1.8F							
	2247				2340					2351													
13		0230	2.2E	28		0324	2.3E		13		0325	2.1E	28	0141	0447	1.8E							
Su	0601	0935	2.2F	M	0717	1016	2.3F		W	0641	1033	2.1F	Th	0818	1122	2.1F							
	1256	1516	1.4E		1406	1618	1.5E			1333	1617	1.6E		1437	1733	1.9E							
	1738	2130	1.6F		1942	2219	1.7F			1900	2241	1.6F		2127	2354	1.8F							
	2327																						
14		0307	2.2E	29	0042	0418	2.1E		14	0046	0412	2.0E	29	0249	0536	1.6E							
M	0635	1018	2.1F	Tu	0808	1108	2.2F		Th	0718	1116	2.1F	F	0857	1205	2.0F							
	1331	1558	1.4E		1448	1714	1.6E			1406	1704	1.8E		1508	1818	2.0E							
	1818	2213	1.5F		2051	2320	1.7F			2004	2339	1.7F		2220									
15	0012	0350	2.1E	30	0150	0512	1.9E		15	0149	0503	1.9E	30		0049	1.9F							
Tu	0713	1104	2.1F	W	0858	1157	2.1F		F	0758	1202	2.0F	Sa	0400	0633	1.5E							
	1408	1642	1.4E		1527	1809	1.7E			1443	1755	1.9E		0936	1251	2.0F							
	1908	2304	1.5F		2156					2111				1542	1905	2.0E							
														2310									
				31		0019	1.7F																
				Th	0305	0611	1.8E																
					0948	1244	2.1F																
					1604	1858	1.8E																
					2254																		

Time meridian 75° W. 0000 is midnight, 1200 is noon.

CHESAPEAKE AND DELAWARE CANAL (Chesapeake City), 1990

F-Flood, Dir. 110° True E-Ebb, Dir. 290° True

JULY										AUGUST													
Slack Water				Maximum Current				Slack Water				Maximum Current				Slack Water				Maximum Current			
Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.	Day	Time		Vel.				
	h.m.		knots		h.m.		knots		h.m.		knots		h.m.		knots		h.m.		knots				
1 Su	0511	0140	1.9F	16 M	0421	0118	2.0F	1 W	0004	0246	2.0F	16 Th	0014	0304	2.1F								
	1017	1340	1.9F		0851	0644	1.3E		0636	0828	1.1E		0710	0847	1.0E								
	1618	1950	2.1E		1532	1309	1.9F		1042	1438	1.8F		1048	1453	1.8F								
	2358				2315	1915	2.3E		1659	2045	2.2E		1712	2106	2.3E								
2 M		0233	2.0F	17 Tu		0221	2.1F	2 Th	0053	0339	2.0F	17 F	0117	0403	2.2E								
	0816	0819	1.3E		0552	0753	1.2E		0732	0923	1.1E		0810	0955	1.2E								
	1103	1426	1.8F		0946	1409	1.8F		1140	1529	1.8F		1238	1555	1.8F								
	1658	2037	2.2E		1625	2015	2.4E		1748	2134	2.2E		1821	2208	2.3E								
3 Tu	0044	0325	2.0F	18 W	0023	0323	2.2F	3 F	0141	0430	2.1F	18 Sa	0214	0459	2.2F								
	0716	0910	1.2E		0717	0900	1.1E		0822	1015	1.2E		0859	1101	1.3E								
	1152	1516	1.8F		1053	1507	1.8F		1240	1622	1.8F		1404	1653	1.9F								
	1740	2123	2.2E		1723	2118	2.4E		1838	2225	2.3E		1930	2309	2.3E								
4 W	0129	0414	2.1F	19 Th	0127	0422	2.2F	4 Sa	0225	0518	2.1F	19 Su	0306	0552	2.3F								
	0810	1002	1.2E		0828	1007	1.1E		0906	1104	1.3E		0941	1159	1.5E								
	1243	1605	1.8F		1215	1607	1.8F		1338	1712	1.8F		1511	1753	2.0F								
	1824	2211	2.3E		1825	2219	2.5E		1927	2309	2.3E		2035										
5 Th	0213	0503	2.2F	20 F	0227	0521	2.3F	5 Su	0306	0606	2.2F	20 M	0354	0639	2.3F								
	0859	1053	1.2E		0926	1112	1.2E		0943	1153	1.4E		1018	1248	1.7E								
	1331	1651	1.8F		1348	1707	1.9F		1433	1801	1.8F		1609	1845	2.0F								
	1908	2254	2.3E		1928	2321	2.5E		2015	2354	2.3E		2136										
6 F	0256	0550	2.2F	21 Sa	0322	0613	2.3F	6 M	0342	0647	2.2F	21 Tu	0437	0724	2.3F								
	0944	1137	1.3E		1015	1211	1.4E		1015	1235	1.5E		1052	1331	1.9E								
	1415	1737	1.7F		1508	1805	1.9F		1523	1847	1.8F		1701	1938	2.0F								
	1951	2338	2.3E		2031				2104				2233										
7 Sa	0335	0635	2.2F	22 Su		0017	2.4E	7 Tu		0037	2.2E	22 W		0138	2.1E								
	1025	1223	1.3E		0414	0704	2.4F		0414	0730	2.2F		0517	0806	2.2F								
	1458	1826	1.7F		1059	1307	1.5E		1043	1316	1.7E		1122	1413	2.0E								
	2034				1616	1901	1.9F		1611	1934	1.9F		1749	2027	2.0F								
					2133				2154				2327										
8 Su		0021	2.3E	23 M		0108	2.3E	8 W		0122	2.2E	23 Th		0223	1.9E								
	0411	0718	2.2F		0501	0751	2.3F		0443	0811	2.2F		0553	0846	2.1F								
	1100	1307	1.4E		1137	1358	1.6E		1109	1400	1.8E		1150	1451	2.0E								
	1539	1909	1.7F		1717	1956	1.9F		1659	2024	1.9F		1834	2114	2.0F								
	2117				2232				2246				2327										
9 M		0102	2.3E	24 Tu		0158	2.2E	9 Th		0205	2.1E	24 F		0304	1.8E								
	0443	0801	2.2F		0545	0838	2.3F		0512	0850	2.1F		0624	0926	2.1F								
	1130	1347	1.4E		1212	1445	1.8E		1136	1441	2.0E		1217	1530	2.1E								
	1622	1956	1.7F		1814	2048	1.9F		1749	2114	1.9F		1917	2201	2.0F								
	2202				2331				2342														
10 Tu		0142	2.2E	25 W		0246	2.1E	10 F		0248	1.9E	25 Sa		0347	1.6E								
	0512	0840	2.2F		0625	0921	2.2F		0541	0930	2.1F		0649	1009	2.0F								
	1157	1428	1.6E		1244	1527	1.9E		1207	1521	2.1E		1245	1607	2.1E								
	1708	2043	1.7F		1907	2140	1.9F		1842	2206	2.0F		2000	2250	2.0F								
	2249																						
11 W		0224	2.1E	26 Th		0332	1.9E	11 Sa		0335	1.8E	26 Su		0428	1.5E								
	0541	0921	2.2F		0702	1002	2.2F		0614	1014	2.0F		0711	1050	1.9F								
	1223	1507	1.7E		1313	1609	1.9E		1243	1609	2.2E		1318	1650	2.1E								
	1758	2130	1.7F		1958	2231	1.9F		1939	2300	2.0F		2044	2337	2.0F								
	2341																						
12 Th		0305	2.0E	27 F		0416	1.7E	12 Su		0427	1.6E	27 M		0513	1.4E								
	0611	1002	2.1F		0734	1047	2.1F		0512	1100	1.9F		0738	1134	1.8F								
	1251	1549	1.8E		1341	1652	2.0E		1324	1658	2.3E		1356	1735	2.1E								
	1854	2225	1.8F		2047	2321	1.9F		2043				2132										
13 F		0339	1.9E	28 Sa		0503	1.6E	13 M		0500	2.0F	28 Tu		0602	1.9F								
	0644	1045	2.1F		0803	1129	2.0F		0301	0526	1.4E		0347	0600	1.2E								
	1324	1634	2.0E		1412	1733	2.1E		0731	1151	1.9F		0812	1221	1.7F								
	1953	2319	1.8F		2135				1411	1755	2.3E		1439	1821	2.1E								
									2153				2224										
14 Sa		0443	1.7E	29 Su		0012	1.9F	14 Tu		0059	2.0F	29 W		0118	1.9F								
	0722	1130	2.0F		0328	0551	1.4E		0426	0629	1.2E		0447	0652	1.2E								
	1401	1725	2.1E		0833	1212	1.9F		0820	1248	1.8F		0857	1312	1.7F								
	2058				1447	1819	2.1E		1505	1855	2.3E		1528	1911	2.1E								
					2224				2305				2318										
15 Su		0017	1.9F	30 M		0105	1.9F	15 W		0201	2.1F	30 Th		0212	1.9F								
	0258	0540	1.5E		0431	0642	1.3E		0554	0736	1.0E		0548	0749	1.1E								
	0803	1218	1.9F		0907	1300	1.8F		0922	1350	1.8F		0952	1406	1.7F								
	1444	1818	2.3E		1527	1905	2.1E		1605	2000	2.3E		1620	2006	2.1E								
	2206				2314																		
				31 Tu		0157	2.0F					31 F		0306	2.0F								
					0535	0734	1.2E						0643	0844	1.2E								
					0950	1349	1.8F						1058	1459	1.7F								
					1611	1956	2.2E						1715	2100	2.2E								

Time meridian 75° W. 0000 is midnight. 1200 is noon.

SEPTEMBER

OCTOBER

Time meridian 75° W. 0000 is midnight. 1200 is noon.

CHESAPEAKE AND DELAWARE CANAL (Chesapeake City), 1990

F-Flood, Dir. 110° True E-Ebb, Dir. 290° True

NOVEMBER

Day	Slack Water Time h.m.	Maximum Current Time h.m.	Vel. knots	Day	Slack Water Time h.m.	Maximum Current Time h.m.	Vel. knots
1 Th	0131 0729 1432 2057	0500 1058 1744 2331	2.0F 2.3E 2.3F 1.7E	16 F	0257 0821 1543 2211	0542 1150 1830 2211	1.9F 2.2E 2.2F 1.5E
2 F	0216 0811 1525 2200	0546 1147 1837 244F	2.0F 2.4E 2.4F 2.4F	17 Sa	0333 0855 1621 2253	0625 1228 1913 2253	1.9F 2.3E 2.2F 1.5E
3 Sa	0259 0855 1619 2301	0635 1236 1930 244F	1.6E 2.0F 2.5E 2.4F	18 Su	0403 0929 1658 2332	0706 1306 1954 2332	1.9F 2.3E 2.2F 1.4E
4 Su	0343 0941 1713	0722 1325 2023	1.6E 2.0F 2.5E 2.4F	19 M	0426 1004 1733	0749 1343 2037	1.4E 1.8F 2.2E 2.2F
5 M	0000 0428 1030 1810	0207 0813 1416 2118	1.4E 1.9F 2.5E 2.3F	20 Tu	0009 0447 1040 1806	0220 0829 1420 2120	1.4E 1.7F 2.2E 2.1F
6 Tu	0059 0518 1123 1908	0302 0905 1511 2212	1.4E 1.9F 2.4E 2.2F	21 W	0045 0515 1118 1838	0258 0911 1458 2203	1.3E 1.7F 2.2E 2.1F
7 W	0157 0619 1220 2008	0359 1005 1606 2307	1.3E 1.8F 2.3E 2.2F	22 Th	0119 0553 1201 1911	0339 0956 1541 2247	1.3E 1.6F 2.1E 2.0F
8 Th	0254 0743 1324 2108	0456 1103 1706 2218	1.3E 1.7F 2.2E 2.0E	23 F	0154 0641 1248 1948	0422 1044 1622 2333	1.4E 1.6F 2.1E 2.0F
9 F	0346 0919 1435 2206	0558 1208 1808 240E	2.1F 1.4E 1.7F 2.0E	24 Sa	0231 0739 1343 2029	0506 1137 1711 240E	1.5E 1.6F 2.0E 1.5E
10 Sa	0434 1040 1556 2302	0700 1311 1912 240E	2.1F 1.5E 1.7F 1.9E	25 Su	0309 0846 1446 2113	0601 1234 1806 2113	2.0F 1.6E 1.7F 1.9E
11 Su	0517 1146 1718 2355	0147 0801 1412 2015	2.0F 1.7E 1.8F 1.7E	26 M	0349 0959 1556 2202	0654 1333 1909 2202	2.0F 1.8E 1.8F 1.8E
12 M	0558 1244 1834	0238 0857 1511 2112	2.0F 1.9E 1.9F 1.7E	27 Tu	0431 1110 1713 2253	0746 1431 2009 2253	2.0F 2.0E 1.9F 1.7E
13 Tu	0635 1334 1939	0326 0946 1605 2207	2.0F 2.0E 2.0F 1.6E	28 W	0514 1216 1831 2347	0840 1533 2110 2347	2.0F 2.2E 2.1F 1.6E
14 W	0712 1420 2035	0412 1029 1656 2259	2.0F 2.1E 2.1F 1.6E	29 Th	0600 1318 1946	0935 1629 2210	2.0F 2.3E 2.2F 1.6E
15 Th	0216 0747 1503 2125	0458 1112 1744 2344	2.0F 2.2E 2.2F 1.6E	30 F	0641 1417 2056	0424 1029 2309	2.0F 2.4E 2.3F 1.5E

DECEMBER

Day	Slack Water Time h.m.	Maximum Current Time h.m.	Vel. knots	Day	Slack Water Time h.m.	Maximum Current Time h.m.	Vel. knots
1 Sa	0135 0737 1514 2201	0517 1122 1820 244F	2.0F 2.5E 2.4F 2.4F	16 Su	0253 0820 1557 2232	0554 1159 1845 2232	1.9F 2.3E 2.2F 2.2F
2 Su	0229 0829 1611 2300	0007 0610 1215 1915	1.5E 2.0F 2.6E 2.4F	17 M	0326 0859 1635 2310	0034 0637 1240 1929	1.4E 1.8F 2.3E 2.2F
3 M	0324 0922 1706 2356	0702 1309 2007 244F	2.0F 2.5E 2.4F 2.4F	18 Tu	0354 0937 1709 2345	0116 0721 1317 2012	1.4E 1.8F 2.3E 2.2F
4 Tu	0423 1017 1802	0156 0757 1403 2059	1.4E 1.9F 2.5E 2.3F	19 W	0423 1015 1740	0156 0805 2054	1.4E 1.8F 2.2E 2.1F
5 W	0047 0529 1115 1855	0251 0852 1459 2151	1.4E 1.9F 2.4E 2.3F	20 Th	0016 0457 1056 1808	0234 0847 1435 2135	1.4E 1.7F 2.2E 2.1F
6 Th	0136 0644 1215 1948	0346 0951 1553 2242	1.4E 1.9F 2.2E 2.2F	21 F	0044 0539 1140 1836	0313 0930 1514 2215	1.5E 1.7F 2.1E 2.1F
7 F	0221 0802 1321 2039	0441 1050 1649 2334	1.5E 1.8F 2.1E 2.1F	22 Sa	0113 0629 1229 1907	0354 1021 1555 2256	1.6E 1.7F 2.0E 2.0F
8 Sa	0303 0916 1433 2130	0537 1151 1745 240E	1.6E 1.8F 1.9E 1.9E	23 Su	0144 0725 1326 1943	0437 1112 1642 2340	1.7E 1.7F 1.9E 2.0F
9 Su	0343 1022 1551 2219	0633 1250 1843 240E	1.8E 1.8F 1.7E 1.7E	24 M	0219 0828 1430 2024	0526 1208 1736 240E	1.9E 1.8F 1.8E 1.8E
10 M	0422 1121 1708 2309	0724 1348 1944 240E	1.9E 1.9F 1.6E 1.6E	25 Tu	0258 0935 1541 2109	0615 1308 1835 240E	2.0F 2.0E 1.9F 1.7E
11 Tu	0501 1215 1819 2359	0201 0818 1445 2038	2.0F 2.0E 1.9F 1.5E	26 W	0341 1045 1700 2200	0116 0713 1408 1936	1.9F 2.1E 2.0F 1.5E
12 W	0541 1304 1922	0250 0904 1538 2135	1.9F 2.1E 2.0F 1.4E	27 Th	0429 1155 1823 2256	0207 0809 1508 2044	1.9F 2.3E 2.1F 1.4E
13 Th	0621 1351 2016	0339 0950 1629 2224	1.9F 2.2E 2.1F 1.4E	28 F	0522 1302 1943 2358	0300 0907 1609 2148	1.9F 2.4E 2.2F 1.3E
14 F	0701 1434 2105	0423 1033 1716 2309	1.9F 2.2E 2.1F 1.4E	29 Sa	0617 1406 2053	0358 1008 1706 2250	1.9F 2.5E 2.3F 1.3E
15 Sa	0215 0741 1517 2150	0510 1117 1800 2354	1.9F 2.2E 2.2F 1.4E	30 Su	0104 0715 1506 2154	0456 1104 1802 2352	1.9F 2.5E 2.3F 1.3E
31 M	0214 0815 1603 2248	0554 1203 1857 244F	2.0F 2.5E 2.4F 2.4F				

Time meridian 75° W. 0000 is midnight, 1200 is noon.

TABLE 2.2 — CURRENT DIFFERENCES AND OTHER CONSTANTS AND ROTARY TIDAL CURRENTS

EXPLANATION OF TABLE

In this publication, reference stations are those for which daily predictions are listed in Table 2.1. Those stations appearing in Table 2.2 are called subordinate stations. The principal purpose of Table 2.2 is to present data that will enable one to determine the approximate times of minimum currents (slack waters) and the times and speeds of maximum currents at numerous subordinate stations in this region. By applying specific corrections given in Table 2.2 to the predicted times and speeds of the current at the appropriate reference station, reasonable approximations of the current at the subordinate station may be calculated.

Locations and depth.—Because the latitude and longitude are listed according to the exactness recorded in the original survey records, the locations of the subordinate stations are presented in varying degrees of accuracy. Since a minute of latitude is nearly equivalent to a mile, a location given to the nearest minute may not indicate the exact position of the station. This should be remembered, especially in the case of a narrow stream, where the nearest minute of latitude or longitude may locate a station inland. In such cases, unless the description locates the station elsewhere, reference is made to the current in the center of the channel. In some instances, the charts may not present a convenient name for location a station. In those cases, the position may be described by a bearing from some prominent place on the chart.

Although current measurements may have been recorded at various depths in the past, the data listed here for most of the subordinate stations are mean values determined to have been representative of the current at each location. For that reason, no specific current meter depths for those stations are given in Table 2.2. Beginning in 1971, data for individual meter depths were published and subsequent new data may be presented in a similar manner.

Since most of the current data in Table 2.2 came from meters suspended from survey vessels or anchored buoys, the listed depths are those measured downward from the surface. Some later data have come from meters anchored at fixed depths from the bottom. Those meter positions were defined as depths below chart datum. Such defined depths in this and subsequent editions will be accompanied by the small "d".

Minimum currents.—The reader may note that at many locations the current may not diminish to a true slack water or zero speed stage, the direction of flow at such locations essentially rotated around the compass in one tidal cycle, with the flow at minimums usually in a direction perpendicular to the direction of the maximum flow. For that reason the phrases "minimum before flood" and "minimum before ebb" are used in Table 2.2 rather than "slack water", although either or both minimum may actually reach a zero speed value at some locations. Table 2.2 lists the average speeds and directions of the minimums.

Maximum Currents.—Near the coast and in inland tidal waters, the current increases from minimum current (slack water) for a period of about 3 hours until the maximum speed or the strength of the current is reached. The speed then decreases for another period of about 3 hours when minimum current is again reached and the current begins a similar cycle in the opposite direction. The current that flows toward the coast or up a stream is known as the flood current; the opposite flow is known as the ebb current. Table 2.2 lists the average speeds and directions of the maximum floods and maximum ebbs. The directions are given in degrees true, reading clockwise from 000° at north to 359° and are the directions toward which the current flow.

Time differences and speed ratios.—Table 2.2 contains mean time differences by which the reader can compile approximate times for the minimum and maximum current phases at the subordinate stations. Time differences for those phases should be applied to the corresponding

TABLE 2.2 —CURRENT DIFFERENCES AND OTHER CONSTANTS AND ROTARY TIDAL CURRENTS

phases at the reference station. The results obtained by the application of the time differences will be based upon the time meridian shown above the name of the subordinate station. Differences of time meridians between a subordinate station and its reference station have been accounted for and no further adjustment by the reader is needed. Summer or daylight saving time is not used in this publication.

The speed ratios are used to compile approximations of the daily current speeds at the subordinate stations and refer only to the maximum floods and ebbs. No attempt is made to predict the speeds of the minimum currents. Normally, these ratios should be applied to the corresponding maximum current phases at the reference station. As mentioned above, however, some subordinate stations may exhibit either a double flood or a double ebb or both. As with the time differences, separate ratios are listed for each of the three flood (or ebb phases) and should be applied only to the daily maximum flood (or ebb) speed at the reference station. It should be noted that although the speed of a given current phase at a subordinate station is obtained by reference to the corresponding phase at the reference station, the directions of the current at the two places may differ considerably. Table 2.2 lists the average directions of the various current phases at the subordinate stations.

Rotary tidal currents.—The last page of Table 2.2 lists the data for one station which exhibited a rotary current pattern. Briefly, a rotary current can be described as one which flows continually with the direction of flow changing through all points of the compass during the tidal period. A more complete description can be found in the glossary located elsewhere in this publication. The average speeds and directions are listed in half-hour increments as referred to the predicted times of a particular current phase at Chesapeake Bay Entrance. The Moon, at times of new, full, or perigee may increase speeds 15 to 20 percent above average; or 30 to 40 percent if perigee occurs at or near the time of new or full Moon. Conversely, the Moon at times of quadrature or apogee may decrease the speeds 15 to 20 percent or 30 to 40 percent if they occur together. Near average speeds may be expected when the apogee occurs near or at new or full Moon, or when perigee occurs at or near quadrature. The directions of the currents are given in degrees true, reading clockwise from 000° at north to 359° and are the directions toward which the water is flowing.

TABLE 2.2 —CURRENT DIFFERENCES AND OTHER CONSTANTS AND ROTARY TIDAL CURRENTS

EXAMPLE OF THE USE OF TABLE

Suppose we wish to calculate the times of the minimum currents and the times and speeds of the maximum currents on a particular morning at the location listed as Rockaway Point. From Table 2.2, we learn that the reference station is THE NARROWS whose morning current are listed below. Currents for Statue of Liberty can be approximated by using the Table 2.2 corrections as indicated.

	Minimum before flood			Minimum before ebb		
	h.m.	h.m.	kn.	h.m.	h.m.	kn.
The Narrows	0328	0602	1.5	0831	1146	1.9
Table 2.2 correction	-0236	-0234	x1.1ratio	-0138	-0302	x0.5ratio
Rockway Point	0052	0328	1.65	0653	0844	0.95

Table 2.2 states that the average speeds and directions of the minimums before flood and ebb are 0.2 knots at 228° and 0.2 knots at 217°, respectively. The average direction of the maximum flood and ebb are 301° and 140°, respectively.

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES			SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	h. m. h. m. h. m. h. m.	Min. before Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
		ft	N	W						knots deg.	knots deg.	knots deg.	knots deg.
LONG ISLAND SOUND Time meridian, 75°W													
3326	Throgs Neck, 0.4 mile south of.....	15	40 47.90	73 47.45	+0 36	+0 18	+0 20	+0 06	1.3	0.8	0.0	0.0	0.6 278
3331	THROGS NECK, 0.2 mile south of.....	15	40 48.12	73 47.48	Daily predictions				2.5	1.2	0.0	0.0	0.8 289
3336	Throgs Neck Bridge.....	15	40 48.1	73 47.6	-0 45	+0 12	-0 23	-0 09			0.1 194	0.0	0.9 276
EAST RIVER													
3341	Cryders Point, 0.4 mile NW of.....	14	40 48.02	73 47.92	-0 29	-0 43	-0 30	-1 00	0.4	0.2	0.0	0.0	1.1 285
3346	Bronx-Whitestone Bridge, East of.....	15	40 48.1	73 49.6	-0 34	-0 46	-0 10	-1 27	0.5	0.2	0.0	0.0	1.0 247
3351	College Point Reef, NW of.....	15	40 47.9	73 51.2	-0 33	-0 49	-0 01	-0 57	0.4	0.3	0.1 338	0.0	1.3 255
3356	Flushing Creek entrance.....	40	45.9	73 50.7	Current weak and variable						1.5 050	0.1 311	
3361	Rikers I. chan., off La Guardia Field.....	40	47.9	73 53	+0 04	-0 04	+0 04	-0 08	0.3	0.3	0.0	0.0	1.3 261
3366	Bronx River (1 mile north of Hunts Pt.).....	40	48.9	73 52.5	Current weak and variable						1.1 088	0.0	
3371	Hunts Point, southwest of.....	40	48.9	73 53	+0 01	-0 10	+0 01	-0 05	0.5	0.3	0.0	0.0	1.3 280
3376	South Brother Island, NW of.....	15	40 47.8	73 54.1	-0 17	+0 04	-0 06	-0 12	0.4	0.3	0.0	0.0	1.2 252
3381	Off Winthrop Ave., Astoria.....	40	47.2	73 55.0	+0 04	+0 02	-0 01	-0 11	1.0	0.5	0.0	0.0	2.5 220
3386	Mill Rock, northeast of.....	40	46.9	73 56.2	-0 23	+0 05	-0 29	-0 32	0.7	0.1	0.0	0.0	0.6 298
3391	Mill Rock, west of.....	40	46.8	73 56.5	-0 26	+0 08	-0 02	-0 17	0.4	0.2	0.0	0.0	1.0 180
3396	HELL GATE (off Mill Rock).....	40	46.7	73 56.3	Daily predictions						3.4 050	0.0	4.6 230
3401	Roosevelt Island												
3406	west of, off 75th Street.....	40	46	73 57	-0 02	-0 04	-0 08	+0 07	1.1	1.0	0.0	0.0	4.7 215
3411	east of, off 36th Avenue.....	40	46	73 57	-0 08	-0 04	-0 08	-0 11	1.0	0.7	0.0	0.0	3.4 210
3416	west of, off 67th Street.....	40	46.74	73 57.24	+0 13	-0 08	+0 06	+0 11	1.1	0.9	0.0	0.0	4.0 230
3421	west of, off 63rd Street.....	40	45.58	73 57.27	-0 10	-0 08	0 00	+0 03	0.8	0.6	0.0	0.0	2.9 223
3426	east of.....	40	45.49	73 57.08	0 00	-0 06	+0 02	+0 07	0.8	0.6	0.0	0.0	2.6 200
3431	Manhattan, off 31st Street.....	40	44.38	73 58.17	+0 09	-0 11	-0 02	+0 36	0.4	0.5	0.0	0.0	2.1 175
3436	Newtown Creek entrance.....	40	44	73 57	Current weak and variable						1.5 000	0.0	
3441	Pier 67, off 19th Street.....	40	44	73 58	-0 08	+0 08	-0 08	+0 07	0.5	0.4	0.0	0.0	1.9 179
3446	Williamsburg Bridge, 0.3 mile north of.....	40	43.08	73 58.24	-0 05	+0 12	-0 01	+0 10	0.8	0.6	0.0	0.0	2.9 220
3451	Manhattan Bridge, East of.....	15	40 42.5	73 59.4	-0 28	+0 19	-0 13	+0 03	0.7	0.5	0.1 161	0.0	2.2 259
3456	Brooklyn Bridge, 0.1 mile southwest of.....	15	40 42.2	74 00.0	-0 31	-0 08	-0 04	-0 07	0.9	0.8	0.0	0.0	3.5 222
3461	Buttermilk Channel (SEE CAUTION NOTE).....	15	40 41.3	74 00.8	-0 31	0 00	+0 03	-0 18	0.5	0.6	0.0	0.0	2.6 221
	Buttermilk Channel.....	15	40 41.15	74 00.81	-0 12	-0 18	-0 06	+0 18	0.5	0.5	0.0	0.0	2.6 220
HARLEM RIVER													
3466	East 107th Street.....	15	40 47.4	73 56.1	-0 08	-0 03	-1 09	-1 39	0.2	0.2	0.0	0.0	0.8 030
3471	Willis Ave. Bridge, 0.1 mile NW of.....	15	40 48.3	73 55.8	-0 30	0 00	-0 12	-0 13	0.4	0.3	0.0	0.0	1.3 330
3476	Madison Ave. Bridge.....	40	48.3	73 56.1	-0 20	0 18	-0 21	-0 14	0.5	0.4	0.0	0.0	1.7 000
3481	Macombs Dam Bridge.....	40	49.7	73 56.1	-0 20	+0 14	-0 22	-0 11	0.5	0.3	0.0	0.0	1.4 000
3486	High Bridge.....	40	50.5	73 55.9	-0 20	+0 08	-0 23	-0 08	0.6	0.4	0.0	0.0	2.0 015
3491	West 207th Street Bridge.....	40	51.8	73 54.9	-0 22	+0 05	-0 22	-0 02	0.6	0.4	0.0	0.0	2.0 035
3496	Broadway Bridge.....	40	52.4	73 54.7	-0 23	+0 08	-0 20	+0 04	0.6	0.5	0.0	0.0	2.3 299
3501	Henry Hudson Bridge, 0.7 mi., SE of.....	16	40 52.6	73 55.3	+0 12	+0 31	-0 31	+0 41	0.2	0.3	0.0 0 51	0.0 054	1.3 326

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Min. Flood	h. m. h. m. h. m.	h. m. h. m.	Flood Ebb	Minimum before Flood	Maximum Flood	Minimum Ebb	Maximum Ebb	
		ft	° ' N	° ' W	h. m. h. m. h. m.	h. m. h. m.	h. m. h. m.	h. m. h. m.		knots deg.	knots deg.	knots deg.	knots deg.	
	JAMAICA BAY Time meridian, 75°W				on THE NARROWS, p. 83									
3561	Rockaway Point.....	15	40 32.3	73 56.8	-2 36	-2 34	-1 38	-3 02	1.1 0.5	0.2 228	1.9 301	0.2 217	1.1 140	
3566	Rockaway Inlet.....	14	40 33.7	73 56.1	-1 55	-2 20	-1 33	-2 11	1.1 1.3	0.0 -	1.8 085	0.0 -	2.7 244	
3571	Rockaway Inlet.....	14	40 34.2	73 53.8	-1 53	-2 00	-1 15	-2 29	0.9 0.8	0.0 -	1.6 066	0.1 344	1.5 261	
	NEW YORK HARBOR ENTRANCE													
3596	Ambrose Channel.....	15	40 31.0	73 58.8	-0 57	-1 10	-0 25	-0 07	0.9 0.8	0.1 025	1.6 303	0.0 -	1.7 123	
3601	Norton Point, WSW of.....	16	40 33.5	74 01.5	-0 13	-1 01	+0 26	+0 27	0.6 0.6	0.3 263	1.0 341	0.1 071	1.2 166	
3606	THE NARROWS, midchannel.....	40 36.6	74 02.8		Daily predictions					0.0 -	0.0 -	1.7 340	0.0 -	2.0 160
	NEW YORK HARBOR, Upper Bay													
3611	Bay Ridge, west of.....	22	40 37.9	74 03.4	-0 11	+0 20	+0 42	+0 59	0.8 0.7	0.1 104	1.4 354	0.0 -	1.5 185	
3616	Bay Ridge Channel.....	15	40 39.3	74 01.9	-0 58	-1 26	+0 04	-1 17	0.6 0.3	0.0 -	1.0 032	0.1 125	0.7 212	
	do.....	36	40 39.3	74 01.9	-1 35	-2 36	-0 50	-0 09	0.4 0.2	0.0 -	0.6 037	0.0 -	0.4 225	
3621	Red Hook Channel.....	40 40.0	74 01.2	-1 03	-0 44	-0 08	-0 30	0.6 0.4	0.0 -	0.0 -	1.0 353	0.0 -	0.7 170	
3626	Robbins Reef Light, east of.....	40 39.45	74 03.48		+0 16	+0 16	+0 02	+0 24	0.8 0.8	0.0 -	1.3 016	0.0 -	1.6 204	
3631	Red Hook, 1 mile west of.....	40 40.5	74 02.5	+0 41	+1 06	+0 47	+0 52	1.3 1.2	0.0 -	0.0 -	1.3 024	0.0 -	2.3 206	
3636	Statue of Liberty, east of.....	40 41.4	74 01.8	+0 57	+0 58	+0 56	+0 59	0.8 1.0	0.0 -	0.0 -	1.4 031	0.0 -	1.9 205	
	HUDSON RIVER, Midchannel <20>													
3641	Hudson River entrance.....	14	40 42.5	74 01.2	+0 49	+1 12	+1 22	+2 18	0.8 0.7	0.1 292	1.4 009	0.0 -	1.4 199	
3646	Grants Tomb.....	16	40 48.8	73 58.1	+1 10	+0 46	+1 42	+2 06	1.0 0.9	0.0 -	1.6 024	0.0 -	1.9 210	
	do.....	18	40 48.8	73 58.1	+1 04	+1 18	+1 58	+1 27	1.1 0.9	0.0 -	1.8 025	0.0 -	1.8 208	
3651	George Washington Bridge.....	40 51	73 57	+1 41	+1 55	+1 50	+2 08	0.9 1.1	0.0 -	0.0 -	1.6 020	0.0 -	2.2 200	
3656	Spyten Duyvil.....	40 53	73 56	+2 11	+2 08	+1 57	+2 24	0.9 1.1	0.0 -	0.0 -	1.6 020	0.0 -	2.1 -	
3661	Riverdale.....	40 54	73 55	+2 11	+2 07	+2 02	+2 32	0.8 1.0	0.0 -	0.0 -	1.4 015	0.0 -	2.0 200	
3666	Mount St. Vincent College, SW of.....	40 54.7	73 54.8	+1 26	+2 00	+2 14	+2 29	0.9 0.7	0.0 -	0.0 -	1.5 007	0.0 -	1.4 190	
3671	Dobbs Ferry.....	41 01	73 53	+2 30	+2 33	+2 24	+2 49	0.8 0.9	0.0 -	0.0 -	1.3 010	0.0 -	1.7 -	
3676	Tarrytown.....	41 05	73 53	+2 37	+2 46	+2 40	+3 02	0.6 0.8	0.0 -	0.0 -	1.1 000	0.0 -	1.5 -	
3681	Ossining.....	41 10	73 54	+2 50	+3 02	+3 05	+3 19	0.5 0.7	0.0 -	0.0 -	0.9 320	0.0 -	1.3 -	
3686	Haverstraw.....	41 12	73 57	+2 55	+3 08	+3 13	+3 26	0.5 0.7	0.0 -	0.0 -	0.8 335	0.0 -	1.3 -	
3691	Peekskill.....	41 17	73 57	+3 10	+3 24	+3 33	+3 42	0.5 0.6	0.0 -	0.0 -	0.8 000	0.0 -	1.2 -	
3696	Bear Mountain Bridge.....	41 19	73 59	+3 16	+3 31	+3 39	+3 48	0.5 0.6	0.0 -	0.0 -	0.8 000	0.0 -	1.1 -	
3701	Highland Falls.....	41 22	73 58	+3 24	+3 37	+3 44	+4 02	0.6 0.6	0.0 -	0.0 -	1.0 005	0.0 -	1.2 185	
3706	West Point, off Duck Island.....	41 24	73 57	+3 32	+3 47	+3 51	+4 04	0.5 0.6	0.0 -	0.0 -	1.0 010	0.0 -	1.1 -	
3711	Newburgh.....	41 30	74 00	+3 50	+4 06	+4 03	+4 21	0.5 0.6	0.0 -	0.0 -	0.9 005	0.0 -	1.1 -	
3716	New Hamburg.....	41 35	73 57	+4 05	+4 20	+4 11	+4 33	0.6 0.6	0.0 -	0.0 -	1.0 005	0.0 -	1.1 -	
3721	Poughkeepsie.....	41 42	73 57	+4 26	+4 37	+4 21	+4 49	0.6 0.6	0.0 -	0.0 -	1.1 005	0.0 -	1.2 -	
3726	Hyde Park.....	41 47	73 57	+4 42	+4 48	+4 30	+5 00	0.7 0.7	0.0 -	0.0 -	1.2 005	0.0 -	1.3 -	
3731	Kingston Point <21>.....	41 56	73 57	+5 09	+5 09	+4 54	+5 19	0.8 0.8	0.0 -	0.0 -	1.3 005	0.0 -	1.6 -	
3736	Barrytown.....	42 00	73 56	+5 26	+5 21	+5 10	+5 26	0.8 0.9	0.0 -	0.0 -	1.4 010	0.0 -	1.7 -	
3741	Saugerties.....	42 04	73 56	+5 43	+5 42	+5 29	+5 36	0.9 1.0	0.0 -	0.0 -	1.5 000	0.0 -	1.9 -	
3746	Silver Point.....	42 09	73 54	+6 01	+6 14	+5 49	+5 56	0.9 1.0	0.0 -	0.0 -	1.5 030	0.0 -	2.0 -	
3751	Catskill.....	42 13	73 51	+6 16	+6 37	+6 09	+6 06	0.9 1.0	0.0 -	0.0 -	1.6 355	0.0 -	2.0 -	
3756	Hudson.....	42 15	73 48	+6 23	+6 45	+6 20	+6 15	0.9 1.0	0.0 -	0.0 -	1.6 030	0.0 -	2.0 -	
3761	Coxsackie.....	42 21	73 47	+6 45	+6 57	+6 55	+6 44	0.9 0.9	0.0 -	0.0 -	1.6 350	0.0 -	1.8 -	

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES		SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Min. before Ebb	Flood	Ebb	Minimum Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
		ft	° ' N	° ' W	h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.	knots deg.	knots deg.
	HUDSON RIVER, Midchannel <20> Time meridian, 75°W				on THE NARROWS, p. 83							
3766	New Baltimore.....		42 27	73 47	+7 12	+7 04	+7 13	+7 09	0.8	0.8	0.0	1.5
3771	Castleton-on-Hudson.....		42 32	73 46	+7 35	+7 11	+7 12	+7 29	0.5	0.6	0.0	1.2
3776	Albany.....		42 39	73 45	+8 29	+7 32	+6 46	+7 47	0.2	0.4	0.0	0.8
3781	Troy (below the locks) <22>.....		42 44	73 42	-	-	-	-	-	-	-	0.7 190
	NEW YORK HARBOR, Lower Bay											
3786	Sandy Hook Channel.....	15	40 29.1	74 00.1	-1 33	-2 03	-1 06	-1 23	1.0	0.9	0.0	1.9 094
3791	Sandy Hook Chan., 0.4 mi. W of N. Tip.....		40 28.79	74 01.30	-1 51	-1 55	-1 30	-1 50	1.2	0.8	0.0	1.6 050
3796	Sandy Hook Pt., 2 mi. W of (Channel).....		40 28.8	74 03.6	-1 45	-2 00	-1 50	-1 42	0.4	0.3	0.0	0.6 086
3801	Chapel Hill South Channel.....		40 29.90	74 02.8	-2 12	-2 30	-1 40	-2 08	0.4	0.3	0.0	0.6 075
3806	New Dorp Beach, 1.2 miles south of.....		40 32.4	74 05.8	-4 19	-3 36	-4 35	-4 16	0.2	0.2	0.0	0.5 030
3811	Old Orchard Shoal Lt., 1.2 mi. ENE of.....		40 31.1	74 04.36	-2 19	-2 07	-1 23	-2 02	0.4	0.2	0.0	0.4 085
3816	New Dorp Beach, 1.8 miles SE of <23>.....		40 32.9	74 03.7	-	-	-	-	0.3	0.3	-	0.5 225
3821	Midland Beach, 2.6 miles SE of <24>.....		40 32.8	74 02.35	0 00	+0 07	0 00	+0 01	0.5	0.6	0.2 270	0.8 335
3826	Coney Island Lt., 1.5 miles SSE of.....		40 33.1	74 00.3	-1 27	-1 56	-0 58	-0 53	0.6	0.6	0.0	1.1 310
3831	Hoffman Island, 0.2 mile west of.....		40 35.1	74 04.3	-1 43	-1 48	-0 17	-0 50	0.5	0.4	0.0	0.9 020
3836	Rockaway Inlet Jetty, 1 mile SW of.....		40 31.8	73 57.2	-2 16	-2 12	-1 28	-1 43	0.7	0.7	0.0	1.2 287
3841	Coney Island Channel, west end.....		40 34.2	74 00.5	-1 21	-0 44	-0 24	-0 48	0.6	0.6	0.0	1.1 293
	SANDY HOOK BAY <25>											
3846	Highlands Bridge, Shrewsbury River.....		40 23.8	73 58.8	+0 21	+0 36	+0 33	+0 19	1.5	1.3	0.0	2.5
3851	Seabright Bridge, Shrewsbury River.....		40 21.9	73 58.5	+0 55	+1 06	+0 52	+0 51	0.8	0.9	0.0	1.7
	RARITAN BAY											
3856	Raritan Bay Reach Channel.....	15	40 29.6	74 07.6	-2 05	-2 40	-0 38	-0 51	0.4	0.2	0.0	0.6 295
3861	Keyport Channel entrance.....		40 26.9	74 11.9	Current weak and variable				0.4	0.3	0.0	0.6 278
3866	Red Bank, 1.4 miles south of.....		40 28.9	74 12.6	-1 45	-2 12	-1 22	-1 44	0.4	0.3	0.0	0.7 281
3871	Seguine Point.....	14	40 30.4	74 11.2	-2 02	-2 50	-0 48	-2 08	0.4	0.2	0.0	0.7 285
	do.....	34	40 30.4	74 11.2	-3 38	-2 51	-0 13	-2 24	0.3	0.1	0.0	0.5 285
3876	Ward Point, ESE.....	14	40 29.5	74 13.8	-1 55	-1 58	-0 11	-0 54	0.4	0.3	0.1 328	0.7 244
	RARITAN RIVER											
3881	Railroad Bridge, Raritan River.....	15	40 29.9	74 17.0	-2 12	-2 25	-1 15	-2 01	0.5	0.4	0.0	0.9 326
3886	Washington Canal, north entrance.....		40 28.3	74 22.1	-1 12	-1 25	-1 30	-2 51	0.9	0.8	0.0	1.5 240
3891	South River entrance.....		40 28.7	74 22.7	-1 55	-2 14	-0 27	-1 44	0.6	0.5	0.0	1.1 180
	ARTHUR KILL											
3896	Tottenville, Arthur Kill.....	15	40 30.8	74 15.3	-1 14	-1 25	-0 33	-1 23	0.6	0.5	0.0	1.0 023
3901	Tufts Point-Smoking Point.....	32	40 30.8	74 15.3	-1 33	-1 05	-0 48	-1 03	0.4	0.2	0.0	0.6 026
3906	Tremley Point Reach.....		40 33.4	74 13.4	-0 48	-0 44	-0 24	-1 00	0.7	0.6	0.0	1.2 267
3911	Elizabethport.....	21	40 35.3	74 12.5	-0 18	-0 54	+0 31	+0 29	0.5	0.4	0.0	0.9 015
	do.....		40 38.8	74 10.9	+0 05	-0 09	+0 32	+0 04	0.8	0.6	0.0	1.4 090

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES		SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	h. m. h. m. h. m. h. m.	Min. before Ebb	Flood Ebb	Minimum Flood	Maximum Flood	Minimum Ebb	Maximum Ebb
		ft	N	W	on THE NARROWS, p. 83				knots deg.	knots deg.	knots deg.	knots deg.
3916	KILL VAN KULL Time meridian, 75°W											
3921	Bergen Point, East Reach.....	15	40 36.7	74 07.8	-1 34	-2 13	-1 35	-1 44	0.0	1.1 274	0.0	1.2 094
	New Brighton.....	15	40 39.0	74 05.1	-1 44	-2 08	-1 24	-1 43	0.0	1.3 262	0.0	1.9 072
	do.....	17	40 39.0	74 05.1	-2 00	-2 19	-1 36	-1 14	0.0	1.3 259	0.0	1.4 075
3926	NEWARK BAY											
	South Reach, Newark Bay.....	15	40 39.6	74 08.4	-0 56	-1 45	-0 51	-1 06	0.0	0.7 031	0.0	0.7 218
	HACKENSACK RIVER											
3931	Lincoln Highway Bridge, north of.....	40	44	74 06	-0 06	+0 12	+0 47	-0 14	0.0	0.9 017	0.0	0.8 181
	PASSAIC RIVER											
3936	Lincoln Highway Bridge.....	40	44	74 07	-0 31	-0 19	-0 12	-0 20	0.0	0.6 009	0.0	0.5 180
3941	NEW JERSEY COAST											
	Manasquan Inlet.....	40	06	74 02	-0 43	-0 30	-1 12	-0 57	0.0	1.7 300	0.0	1.8 120
3946	Manasquan R., hwy. bridge, main chan.....	40	06	74 03	-0 41	-0 50	-1 15	-0 10	0.0	2.2 230	0.0	2.1 050
3951	Point Pleasant Canal, north bridge <63>.....	40	05	74 04	+1 46	+1 28	+0 48	+2 10	0.0	1.8 170	0.0	2.0 350
3956	Barnegat Inlet.....	39	46	74 07	+1 01	+0 12	+0 15	+0 48	0.0	2.2 270	0.0	2.5 090
3961	Manahawkin Drawbridge.....	39	39	74 11	+2 33	+2 43	+2 25	+4 21	0.0	1.1 030	0.0	0.9 210
3976	Five Fathom Bank Traffic Lane.....	35d	38 47.30	74 42.68	-1 50	-1 42	-1 02	-0 40	0.0	0.6 304	0.0	0.4 121
	do.....	50d	38 47.30	74 42.68	-2 24	-1 18	-1 21	-1 20	0.0	0.4 302	0.0	0.3 128
3981	McCrie Shoal.....	38	51	74 51	-0 34	-0 26	-0 43	-0 04	0.0	1.3 280	0.0	1.4 100
3986	Cape May Harbor entrance.....	38	57	74 52	-1 45	-0 59	-1 11	-1 14	0.0	1.8 333	0.0	2.2 150
3991	Cape May Canal, east end.....	38	57	74 54	-1 47	-1 48	-1 53	-1 05	0.0	1.9 310	0.0	1.9 130
3996	Cape May Canal, west end.....	38	58	74 58	-1 48	-1 48	-1 48	-1 16	0.0	0.9 264	0.0	0.9 089
4001	DELANWARE BAY and RIVER											
	Cape May Channel.....	38	54	74 58	-1 14	-1 30	-1 11	-0 45	0.0	1.5 306	0.0	2.3 150
4006	Cape May Point, 1.4 n.mi. SSW of.....	15d	38 54.37	74 58.68	-1 03	-1 18	-1 02	-0 47	0.1	1.5 309	0.1	1.8 130
	do.....	25d	38 54.37	74 58.68	-0 56	-1 05	-1 00	-0 41	0.1	1.1 306	0.1	1.2 139
4011	Cape May Point, 2.7 mi. SSW of.....	15d	38 53.40	74 59.13	-1 30	-1 08	-0 47	-0 36	0.1	1.2 299	0.2	0.9 146
4016	DELANWARE BAY ENTRANCE.....	22	38 46.85	75 02.58	Daily predictions					1.4 327		1.3 142
4021	Cape Henlopen, 0.7 n.mi. ESE of.....	12d	38 47.97	75 04.90	-0 05	+0 07	-0 40	-0 03	0.0	1.8 331	0.0	2.4 139
	do.....	70d	38 47.97	75 04.90	-1 26	+0 04	-0 24	+0 16	0.1	1.2 317	0.1	0.7 150
4026	Cape Henlopen, 2 miles northeast of.....	38	49.2	75 03.4	+0 21	+0 21	-0 03	+0 59	0.0	2.0 315	0.0	2.3 145
4031	Cape Henlopen, 4.8 n.mi. northeast of.....	18d	38 51.55	75 01.47	-0 23	-1 11	-0 42	-0 03	0.1	1.5 322	0.2	1.8 150
	do.....	28d	38 51.55	75 01.47	-0 44	-1 00	-0 44	+0 05	0.1	1.0 301	0.2	1.2 154
4036	Cape Henlopen, 5 miles north of.....	38	53.0	75 06.3	+0 22	+0 39	+0 41	+1 08	0.0	2.0 344	0.0	1.9 173
4041	Breakwater Harbor.....	38	47.6	75 06.5	-0 55	-0 50	-1 14	-0 14	0.0	0.8 266	0.0	0.9 078
4046	Roosevelt Inlet (between jetties) <27>.....	38	47.5	75 09.5	-	+2 10	-	+1 15	0.0	0.7 206	0.0	1.1 030
4051	Broadkill Slough.....	14d	38 53.78	75 12.63	-0 36	+0 08	-0 03	+0 01	0.0	0.8 314	0.1	0.6 132
4056	Million River mouth.....	38	56.8	75 18.9	+2 34	+2 29	+1 49	+2 14	0.0	1.5 025	0.0	1.0 190
4061	Bay Shore Channel (north).....	13d	39 04.68	74 58.88	-0 29	+0 05	+0 03	+0 52	0.1	0.8 006	0.1	0.7 183

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS									
			Lat.	Long.	Min. before Flood	h. m.	Flood	h. m.	Min. before Ebb	h. m.	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb	knots deg.	knots deg.		
on DELAWARE BAY ENTRANCE, p. 89																				
4066	Bay Shore Channel (city of Town Bank)...	15d	38 59.08	74 59.28	-0 31	-0 51	-0 45	+0 35	0.7	0.7	0.1	093	0.9	006	0.0	--	--	1.0	183	
4071	Brandywine Ra. (off Brandywine Shoal S)...	15d	38 58.98	75 07.65	-0 07	-0 09	-0 05	+0 18	0.9	1.0	0.0	--	1.3	337	0.0	--	--	1.4	157	
4076	Brandywine Ra. (off Brandywine Shoal N)...	45d	38 58.98	75 07.65	-0 35	+0 06	-0 06	+0 45	0.6	0.6	0.0	--	0.8	331	0.1	058	0.1	058	0.8	147
4081	Big Stone Beach, 2.8 miles southeast of...	15d	39 00.37	75 08.38	-0 09	+0 01	+0 02	+0 27	0.8	0.8	--	--	1.2	339	--	--	--	1.1	164	
4086	Big Stone Beach, 2.2 n.mi. ENE of...	40d	39 00.37	75 08.38	-0 36	0 00	+0 05	+0 24	0.5	0.4	0.1	061	0.9	334	0.0	--	--	0.6	153	
4091	Fourteen Ft. Bank Lt., 1.4 n.mi. SSE of...	15d	39 00.48	75 16.6	-0 44	-0 51	-0 41	-0 11	0.5	0.7	0.0	--	0.7	326	0.0	--	--	0.9	145	
4096	Fourteen Ft. Bank Lt., 1.2 mi. east of...	12d	39 02.32	75 09.48	+0 10	+0 03	+0 13	+0 04	1.0	0.0	0.0	--	0.6	319	0.1	233	0.1	233	0.7	135
4101	Deadman Shoal, 3.1 n.mi. SW of...	30d	39 02.32	75 09.48	-0 20	+0 07	+0 10	+0 51	0.7	0.5	0.1	069	0.9	343	0.1	249	0.1	249	0.7	155
4106	Egg Island Flats...	39	03.3	75 09.5	+0 10	+0 13	+0 29	+0 11	0.9	1.2	0.0	--	1.3	339	0.0	--	--	1.5	174	
4111	Brandywine Range at High Hall Range...	39	04.00	75 04.22	-0 23	+0 04	-0 08	+0 30	0.6	0.5	0.1	085	0.8	352	0.1	263	0.1	263	0.6	173
4116	Maurice River entrance...	39	06.4	75 07.1	-0 53	-0 26	-0 31	+0 40	0.5	0.5	0.0	--	0.7	355	0.0	--	--	0.7	150	
4121	Maurice River entrance...	39	04.97	75 11.28	+0 40	+0 03	+0 21	+1 40	0.7	0.9	0.1	067	1.0	341	0.0	--	--	1.0	192	
4126	Millville Drawbridge, Maurice River <28>	39	17.2	74 59.6	+1 01	+1 27	+1 24	+1 29	1.7	1.7	0.0	--	2.4	000	0.0	--	--	2.2	180	
4131	St. Jones River ent., 1 mile east of...	39	23.7	75 02.4	--	--	--	--	0.4	0.1	0.3	0.0	--	0.6	334	0.0	--	0.4	180	
4136	Kelly Island, 1.5 miles east of...	39	12.8	75 21.7	-0 01	-0 01	+0 11	+0 47	0.4	0.5	0.0	--	0.9	348	0.0	--	--	0.7	122	
4141	Miah Maul Range at Cross Ledge Range...	16d	39 10.72	75 16.40	+1 19	+0 41	+1 27	+2 27	1.1	1.4	0.2	254	1.5	335	0.1	281	0.1	281	1.8	160
4146	False Egg Island Point, 2 miles off...	39	11.4	75 12	+0 27	+0 04	+0 13	+1 02	1.3	1.4	0.2	047	1.8	321	0.0	--	--	1.9	147	
4151	Ben Davis Pt. Shoal, southwest of...	15d	39 14.87	75 18.93	+1 48	+1 30	+1 30	+2 37	1.3	1.4	0.2	047	1.8	321	0.0	--	--	1.9	147	
4156	Ben Davis Point, 3.2 n.mi. SW of...	12d	39 16.13	75 20.88	+2 06	+1 38	+1 51	+2 51	1.4	1.7	0.2	047	1.8	321	0.0	--	--	2.2	140	
4161	Ben Davis Point, 0.8 mile southwest of...	43d	39 16.13	75 20.88	+1 01	+1 17	+2 15	+3 09	0.6	0.3	0.0	--	0.8	319	0.0	--	--	0.4	136	
4166	Cohansey River, 0.5 mile above entrance...	39	20.9	75 18.2	+0 57	+0 58	+1 13	+1 21	0.9	0.6	0.0	--	1.2	308	0.0	--	--	0.8	122	
4171	Bridgeton (Broad Street Bridge) <1>...	39	25.6	75 21.6	+1 30	+1 20	+1 31	+1 49	0.9	1.1	0.0	--	1.2	074	0.0	--	--	1.4	254	
4176	Arnold Point, 2.2 n.mi. WSW of...	14d	39 25.6	75 14.2	--	+2 27	--	+2 52	0.1	0.2	0.0	--	0.2	000	0.0	--	--	0.3	180	
4181	Smyrna River entrance...	29d	39 22.67	75 28.07	+2 23	+2 18	+2 27	+3 10	1.5	1.4	0.0	--	2.1	324	0.1	047	0.1	047	1.9	145
4186	Stony Point, channel west of...	39	21.9	75 30.8	+1 50	+2 08	+2 16	+2 30	1.2	1.0	0.1	225	1.6	327	0.1	055	1.3	140		
4191	Appoquinimink River entrance...	39	27.1	75 33.8	+1 49	+1 41	+1 57	+2 28	0.9	1.2	0.0	--	1.2	250	0.0	--	--	1.5	070	
4196	Artificial Island (Baker Range)...	39	26.8	75 33.8	+2 34	+2 54	+2 14	+2 55	1.1	1.5	0.0	--	1.5	324	0.0	--	--	1.9	151	
4201	Reedy Island (off end of pier)...	14d	39 28.20	75 33.88	+3 02	+2 38	+2 46	+4 06	1.5	2.0	0.2	267	2.1	346	0.0	--	--	1.2	048	
4206	Alloway Creek (off end of pier)...	39	30.7	75 33.4	+3 02	+3 00	+2 46	+3 44	1.7	2.0	0.0	--	2.4	027	0.0	--	--	2.7	175	
4211	New Bridge, Alloway Creek...	39	29.9	75 31.5	+2 22	+2 41	+2 11	+2 17	1.5	1.6	0.0	--	2.1	129	0.0	--	--	2.6	194	
4216	Chesapeake and Delaware Canal Entrance...	39	31.6	75 27.1	+3 04	+3 56	+3 28	+3 57	0.9	1.1	0.0	--	1.3	090	0.0	--	--	2.1	325	
4221	Reedy Point, 0.4 mile east of...	39	33.63	75 34.20	+6 05	+5 30	+6 31	+6 16	1.0	1.5	0.0	--	1.4	264	0.0	--	--	1.4	270	
4226	Reedy Point, 1.1 miles east of...	39	33.53	75 33.13	+3 19	+3 01	+2 46	+4 21	1.3	1.3	0.0	--	1.8	333	0.0	--	--	2.0	087	
4231	Reedy Point, 1.1 miles east of...	39	33.58	75 32.47	+3 20	+3 10	+3 00	+3 57	1.3	1.3	0.0	--	1.8	333	0.0	--	--	2.3	166	
4236	Salen River entrance...	15d	39 34.2	75 33.22	+3 35	+2 35	+2 52	+3 51	1.2	1.6	0.0	--	1.6	341	0.0	--	--	1.7	179	
4241	Bulkhead Shoal Channel, SE, Del. City...	39	34.2	75 30.1	+3 47	+3 32	+3 29	+4 30	1.1	1.2	0.0	--	1.6	341	0.0	--	--	2.2	163	
4246	Bulkhead Shoal Channel, off Del. City...	14d	39 34.58	75 34.52	+3 25	+2 44	+3 01	+4 03	1.3	1.6	0.0	--	1.8	299	0.0	--	--	1.6	245	
4251	Pea Patch Island, channel east of...	39	35.0	75 35.2	+3 17	+2 57	+2 55	+4 05	1.5	1.6	0.0	--	2.1	308	0.0	--	--	2.1	118	
4256	Finns Point, 0.60 n.mi. Northwest of...	39	36.0	75 33.9	+3 31	+3 12	+3 25	+4 30	1.6	1.8	0.0	--	2.3	319	0.0	--	--	2.3	138	
4261	Penn Neck, 0.6 mile west of...	16d	39 36.37	75 34.47	+3 35	+3 07	+3 17	+4 14	1.5	1.7	0.0	--	2.1	332	0.0	--	--	2.3	152	
4266	Penn Neck, 0.3 mile west of...	39	37.05	75 34.92	+3 39	+3 37	+3 06	+3 52	1.2	1.3	0.0	--	1.7	002	0.0	--	--	2.3	152	
4271	New Castle, channel abreast of...	39	37.07	75 34.58	+3 37	+2 52	+2 58	+3 54	1.4	1.6	0.0	--	1.8	339	0.0	--	--	1.7	167	
4276	Kelly Point, 0.2 mile northwest of...	39	38.9	75 32.8	+3 44	+3 54	+3 16	+3 52	1.1	1.2	0.0	--	1.6	049	0.0	--	--	2.4	230	

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
					Lat.	Long.	Min. before Flood	Min. before Ebb			Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
		ft	° N	' W	h. m.	h. m.	h. m.	h. m.	Flood	Ebb	knots deg.	knots deg.	knots deg.	knots deg.
DELAWARE BAY and RIVER Time meridian, 75°W														
on DELAWARE BAY ENTRANCE, p. 89														
4281	Riverview Beach, 0.75 n.mi. west of...	15d	39 39.40	75 32.38	+3 52	+3 22	+3 31	+4 28	1.4	1.5	0.0	2.0	0.0	1.9 225
4286	Deepwater Point, channel northwest of...	15d	39 42.1	75 30.6	+3 45	+3 53	+3 37	+4 16	2.1	2.0	0.0	3.0	0.0	2.6 215
4291	Christina River, 0.9 n.mi. above ent...	15d	39 43.30	75 31.77	+3 53	+3 15	+2 33	+3 50	0.1	2.26	0.1	0.2	0.0	0.8 137
4296	Cherry Island and Flats, channel east of...	15d	39 44.3	75 29.1	+4 10	+4 07	+3 54	+4 18	1.1	1.1	0.0	1.6	0.0	1.4 207
4301	Oldsmans Point.....	15d	39 45.9	75 28.4	+4 29	+3 41	+3 55	+5 01	1.1	1.2	0.0	1.6	0.0	1.5 210
4306	Marcus Hook Bar (north), Main Channel...	15d	39 47.70	75 26.08	+4 15	+3 26	+3 57	+4 49	1.4	1.3	0.0	1.9	0.0	1.7 246
4311	Marcus Hook.....	15d	39 48.2	75 24.6	+4 59	+4 18	+3 54	+5 12	1.2	1.2	0.0	1.7	0.0	1.6 232
4316	Eddys Cove.....	15d	39 50.8	75 20.5	+5 26	+4 40	+4 23	+5 16	1.2	1.7	0.0	1.7	0.0	2.2 242
4321	Essington Harbor.....	15d	39 51.5	75 18.3	+4 10	+3 53	+3 56	+4 17	1.0	0.9	0.0	1.4	0.0	2.2 274
4326	Crab Point, 0.5 mile east of.....	15d	39 50.8	75 17.0	+4 49	+4 43	+4 36	+5 19	1.5	1.5	0.0	2.1	0.0	1.9 268
4331	Hog Island, channel southeast of.....	15d	39 52.0	75 12.9	+4 54	+4 52	+4 34	+5 13	1.4	1.7	0.0	1.9	0.0	2.2 231
4336	Schuylkill River entrance <1>.....	12d	39 53.2	75 11.7	- - -	+3 19	- - -	+4 29	0.4	0.3	0.0	0.5	0.0	0.4 178
4341	Schuylkill River <1>.....	17d	39 54.23	75 12.90	- - -	+2 31	- - -	+3 51	0.2	0.2	0.0	0.2	0.0	0.3 172
4346	Eagle Point, 0.2 n.mi. northwest of...	40d	39 52.82	75 10.38	+5 13	+3 59	+4 27	+4 58	1.1	1.3	0.0	1.6	0.0	1.8 271
4351	Gloucester.....	35d	39 53.4	75 08.1	+5 07	+3 44	+4 22	+4 57	0.8	1.0	0.0	1.1	0.0	1.3 274
4356	Greenwich Point, northeast of.....	35d	39 54.5	75 07.6	+5 14	+5 01	+4 45	+5 21	1.6	1.5	0.0	2.2	0.0	2.0 210
4361	Campen Marine Terminals, E of Chan. <29>	24d	39 56.4	75 07.13	+5 34	+4 49	+4 40	+5 00	1.3	1.3	0.0	1.6	0.0	1.6 188
4366	Petty Island (west end), Main Channel...	35d	39 58.9	75 04.2	+6 08	+5 45	+5 15	+5 27	1.1	1.0	0.0	1.4	0.0	1.7 223
4371	Fisher Point.....	35d	39 59.18	75 03.75	+6 29	+5 52	+4 33	+4 20	1.1	1.0	0.0	1.5	0.0	1.3 214
4376	Fivemile Point Bridge, northeast of.....	35d	40 02.4	74 59.4	+6 55	+5 55	+4 51	+6 07	0.6	1.2	0.0	0.9	0.0	1.6 223
4381	Torresdale, west of channel.....	21d	40 02.6	74 57.6	+6 37	+6 24	+5 43	+6 29	0.7	0.7	0.0	1.0	0.0	0.9 272
4386	Ranocas Creek, off Delanco.....	8	40 05.3	74 51.6	+6 34	+4 54	+5 01	+4 50	0.8	0.9	0.0	1.0	0.0	1.2 252
4391	Collec Point, 0.4 n.mi. east of.....	8	40 05.3	74 51.6	+6 56	+5 30	+4 49	+6 31	0.9	1.2	0.0	1.3	0.0	1.6 200
4396	Bristol, south of.....	15d	40 05.7	74 50.2	+7 33	+5 45	+4 08	+7 07	0.6	1.4	0.0	0.9	0.0	1.8 204
4401	Burlington Island, channel east of.....	15d	40 08.03	74 45.38	+6 27	+4 29	+4 28	+3 51	0.5	0.4	0.0	0.7	0.0	0.5 250
4406	Newbold Island north of, Main Channel...	15d	40 08.2	74 44.2	- - -	- - -	- - -	+7 28	-	1.1	0.0	-	-	1.4 233
4411	Whitenill <30>.....	15d	40 08.2	74 44.2	- - -	- - -	- - -	- - -	-	-	0.0	-	-	-
DEL., MD. and VA. COAST														
4416	Indian River Inlet (bridge).....	38 37	75 04	- - -	+0 04	- - -	+0 31	- - -	1.3	1.6	0.0	1.8	0.0	2.1 085
on CHESAPEAKE BAY ENTRANCE, p. 95														
4431	Smith Island Shoal, southeast of.....	7	37 05.3	75 43.5	-1 36	-1 17	-1 35	-1 34	0.4	0.3	-	0.3	-	0.4 068
4436	Cape Henry Light, 2.2 miles southeast of	36 53.9	75 58.7	-1 16	-0 23	-0 10	-1 10	-1 10	1.2	0.7	-	1.0	-	0.9 165
CHESAPEAKE BAY														
4441	Cape Henry Light, 1.1 n.mi. NNE of.....	15d	36 56.33	75 59.98	+0 26	+0 03	-0 04	+0 10	1.3	1.3	-	1.0	-	1.7 113
4446	do.....	38d	36 56.33	75 59.98	-1 42	-1 41	-1 36	-1 52	1.4	1.0	0.2	1.1	0.2	1.2 106
4451	Cape Henry Light, 2.0 n.mi. north of...	15d	36 57.63	76 00.63	+0 12	+0 25	+1 00	+0 20	1.5	0.9	0.1	1.2	0.1	1.1 110
4456	do.....	39d	36 57.63	76 00.63	-0 23	+0 10	+0 55	-0 17	1.5	0.5	0.1	0.12	0.2	0.7 110
4461	do.....	54d	36 57.63	76 00.63	-1 03	+0 07	+0 34	-1 05	1.1	0.4	0.1	0.02	0.2	0.5 111
4466	do.....	15d	36 58.80	75 59.88	Daily predictions	-	-	-	-	-	0.0	-	-	1.2 129
4471	CHESAPEAKE BAY ENTRANCE.....	15d	37 00.1	75 59.3	-0 27	+0 09	+0 19	+0 23	1.6	1.0	0.1	0.8	-	1.3 104
4481	Cape Henry Light, 4.6 miles north of...	14d	37 01.40	75 59.55	-0 59	-0 09	-0 26	-0 36	0.8	0.5	0.1	0.6	-	0.7 140

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	h. m.	h. m.	h. m.	h. m.	Flood Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
		ft	° N	° W										

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES			SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Min. Flood	Min. Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
		ft	° N	° W	h. m.	h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.	knots deg.	knots deg.
CHESAPEAKE BAY Time meridian, 75°W on CHESAPEAKE BAY ENTRANCE, p. 95													
4646	Windmill Point Light, 2.2 n.mi. ESE of...	14d	37 35.30	76 11.50	+2 49	+2 30	+2 21	+2 29	0.8 0.7	0.1 079	0.6 001	0.1 081	0.9 169
4651	...do.	35d	37 35.30	76 11.50	+1 08	+1 35	+2 01	+1 44	0.8 0.3	-	0.6 342	0.1 246	0.4 175
4656	Milby Point, 5.3 n.mi. WNW of...	13d	37 39.85	76 00.52	+2 13	+2 30	+2 28	+2 32	0.7 0.5	-	0.6 016	0.2 297	0.4 197
4661	Bluff Point, 4.6 n.mi. east of...	38d	37 39.85	76 00.52	+0 33	+0 12	+1 12	+0 40	0.6 0.3	0.1 120	0.5 043	-	0.4 197
4666	...do.	13d	37 40.70	76 12.25	+3 10	+3 25	+2 25	+2 46	0.4 0.6	-	0.4 003	-	0.7 178
4671	Tangier Sound Light, 5.8 n.mi. west of...	33d	37 40.70	76 12.25	+1 30	+2 01	+2 32	+2 01	0.5 0.2	0.1 089	0.4 013	0.1 291	0.2 185
4681	Great Wicomico R. Lt., 3.8 n.mi. ESE of...	15d	37 47.00	76 05.68	+3 34	+4 09	+3 56	+3 26	0.6 0.6	-	0.5 344	0.2 255	0.7 195
4676	...do.	14d	37 47.00	76 11.50	+2 11	+3 27	+4 50	+3 22	0.8 0.2	-	0.6 013	0.1 280	0.5 196
4686	Smith Point Light, 6.7 n.mi. east of...	9d	37 52.83	76 02.65	+2 29	+2 57	+2 45	+1 59	0.5 0.3	-	0.4 352	-	0.4 178
4691	...do.	14d	37 52.83	76 02.65	+3 27	+4 04	+3 49	+3 35	0.7 0.6	-	0.5 341	0.1 249	0.7 171
4701	Smith Point Light, 6 miles north of...	24d	37 52.83	76 05.30	+3 18	+3 27	+3 09	+3 06	0.4 0.4	-	0.4 347	0.1 256	0.5 168
4706	Point Lookout, 5.9 n.mi. ESE of...	15d	37 52.65	76 07.08	+3 30	+4 55	+3 42	+3 32	0.5 0.6	-	0.4 342	-	0.7 167
4711	...do.	14d	37 52.65	76 07.08	+2 15	+2 22	+3 16	+3 24	0.5 0.2	0.1 080	0.4 348	0.1 272	0.3 149
4716	Point Lookout, 1.5 n.mi. east of...	34d	37 52.75	76 09.12	+2 47	+4 33	+3 44	+4 23	0.5 0.6	0.1 068	0.4 347	-	0.7 159
4721	Point Lookin.	39d	37 52.75	76 09.12	+2 49	+4 21	+4 29	+3 34	1.0 0.4	-	0.8 013	0.1 098	0.5 176
4726	Adams Island, 1.1 n.mi. west of...	68d	37 52.75	76 09.12	+2 10	+2 42	+4 09	+2 37	0.1 0.6	-	0.4 356	0.1 243	0.3 160
4731	Point No Point, 4.3 n.mi. east of...	17d	38 08.13	76 13.75	+4 49	+5 10	+4 03	+4 38	0.1 0.2	-	0.2 325	0.1 257	0.4 167
4736	Point No Point, 2.8 n.mi. east of...	15d	38 08.38	76 15.67	+5 21	+5 32	+4 44	+5 06	0.3 0.4	-	0.2 340	-	0.5 172
4741	Point No Point, 1.0 n.mi. east of...	39d	38 08.38	76 15.67	+3 37	+5 00	+4 42	+4 54	0.4 0.1	-	0.4 347	-	0.2 162
4746	Hooper Strait (west), at buoy "2".....	15d	38 13.25	76 06.20	+2 05	+2 28	+2 33	+1 40	0.7 0.4	-	0.3 001	-	0.5 172
4751	Cedar Point, 2.9 n.mi. ENE of...	16d	38 18.65	76 18.80	-2 35	-2 34	-3 16	-2 55	0.5 0.8	-	0.6 035	0.2 304	0.6 233
4756	...do.	50d	38 18.65	76 18.80	-4 08	-3 30	-3 05	-3 15	0.5 0.3	-	0.4 347	-	0.7 164
4761	Drum Point, 2.8 miles northeast of...	38	20.18	76 21.95	-3 23	-2 50	-2 36	-3 42	0.5 0.8	-	0.4 326	-	0.3 141
4766	Cove Point, 1.1 n.mi. east of...	17d	38 22.88	76 21.62	-2 57	-2 42	-2 40	-2 14	0.9 0.9	-	0.4 010	0.0	0.6 185
4771	...do.	40d	38 22.88	76 21.62	-3 22	-3 19	-2 38	-3 26	0.8 0.7	-	0.2 335	0.0	0.4 185
4776	Cove Point, 2.7 n.mi. east of...	15d	38 22.80	76 19.52	-2 23	-2 41	-2 59	-2 40	0.5 0.9	-	0.6 343	0.1 246	0.6 165
4781	Cove Point, 3.9 n.mi. east of...	40d	38 22.80	76 19.52	-3 15	-2 39	-1 53	-2 00	0.9 0.6	-	0.4 344	-	0.7 169
4786	Cove Point, 4.9 n.mi. NNE of...	98d	38 22.80	76 19.52	-3 49	-4 02	-3 13	-3 36	0.7 0.5	-	0.8 347	-	0.5 170
4791	...do.	11d	38 22.52	76 17.92	-3 29	-3 36	-4 08	-3 44	0.4 0.6	-	0.6 341	-	0.4 165
4796	...do.	15d	38 28.03	76 22.60	-2 57	-2 29	-2 24	-2 26	0.7 0.7	-	0.3 346	-	0.4 171
4801	...do.	40d	38 28.03	76 22.60	-3 23	-2 47	-1 58	-2 17	1.0 0.4	-	0.6 333	-	0.6 159
4806	...do.	67d	38 28.03	76 22.60	-3 55	-3 38	-2 14	-2 58	0.6 0.4	-	0.8 332	-	0.3 149
4811	...do.	15d	38 28.03	76 22.60	-3 55	-3 38	-2 14	-2 58	0.6 0.4	-	0.4 321	-	0.4 135

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES						SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS						
					Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	h. m.	h. m.	h. m.	h. m.	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
			°	'	N	°	'	W	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.	knots deg.	knots deg.	
CHESAPEAKE BAY Time meridian, 75°W BALTIMORE HARBOR APPROACH, p.101																			
4786	Kenwood Beach, 1.5 miles northeast of...	38 31.1	76 28.9	-1 56	-2 41	-2 46	-2 37	0.2	0.4			0.0	-	0.2	340	0.0	-	0.3	160
4791	James Island, 3.4 miles west of...	38 31.5	76 25.2	-2 16	-2 39	-3 01	-2 02	0.5	0.4			0.0	-	0.4	005	0.0	-	0.3	175
4796	James Island, 2.5 miles NW of...	38 32.0	76 23.6	-2 31	-2 42	-2 18	-2 36	0.5	0.6			0.0	-	0.4	000	0.0	-	0.5	175
4801	Plum Point, 1.4 miles ESE of...	38 36.75	76 28.65	-1 31	-1 37	-2 02	-2 04	0.2	0.7			0.0	-	0.2	000	0.0	-	0.6	155
4806	Sharp Island Lt., 2.3 n.mi. SE of...	38 36.43	76 20.88	-3 15	-3 34	-3 07	-2 54	0.8	0.7			0.1	116	0.0	0.2	037	-	0.6	203
4811	Sharp Island Lt., 2.1 n.mi. west of...	38 38.60	76 25.22	-1 49	-1 36	-1 33	-1 33	0.4	0.5			-	-	0.4	357	-	-	0.4	183
4816	Sharp Island Lt., 3.4 n.mi. west of...	38 38.63	76 26.88	-2 34	-2 23	-2 23	-2 24	0.4	0.4			-	-	0.3	355	-	-	0.4	186
4821	Plum Point, 2.1 n.mi. NNE of...	38 38.70	76 29.23	-1 50	-1 51	-1 51	-2 01	0.4	0.5			-	-	0.3	353	0.1	272	0.3	183
4826	Poplar Island, 2.2 n.mi. WSW of...	38 44.98	76 26.73	-1 08	-1 26	-0 57	-0 49	0.6	0.8			-	-	0.5	359	-	-	0.4	174
4831	Poplar Island, 3.0 n.mi. WSW of...	38 44.98	76 26.73	-1 08	-1 22	-0 59	-1 08	0.6	0.5			-	-	0.5	359	-	-	0.6	185
4836	Holland Point, 2.0 n.mi. east of...	38 45.10	76 29.93	-1 20	-1 24	-1 45	-1 39	0.2	0.4			0.1	085	0.4	355	-	-	0.4	189
4841	Kent Point, 1.3 miles southwest of...	38 47.50	76 26.00	-1 03	-1 04	-1 11	-1 05	0.6	0.6			-	-	0.2	354	-	-	0.3	180
4846	Kent Point, 4 miles southwest of...	38 49.00	76 21.85	-3 27	-3 38	-3 53	-3 47	0.6	0.6			0.0	-	0.5	025	0.0	-	0.5	210
4851	Horseshoe Point, 1.7 miles east of...	38 50.30	76 27.20	-0 52	-0 39	-0 49	-1 10	0.6	0.6			0.0	-	0.4	055	0.0	-	0.4	235
4856	Bloody Point Bar Light, 0.6 mi. NW of...	38 50.37	76 24.17	-0 06	-0 23	-0 42	-0 05	0.9	0.6			0.0	-	0.5	005	0.0	-	0.5	200
4861	Thomas Pt. Shoal Lt., 1.8 mi. SW of...	38 52.50	76 27.70	-2 24	-2 27	-1 43	-2 17	0.5	0.4			0.0	-	0.4	340	0.0	-	0.3	190
4866	Thomas Pt. Shoal Lt., 2.0 n.mi. east of...	38 53.46	76 23.21	-1 05	-0 14	-0 22	-0 20	0.6	0.6			-	-	0.5	007	-	-	0.5	186
4871	Thomas Pt. Shoal Lt., 0.5 n.mi. SE of...	38 53.46	76 25.62	-0 25	-0 09	-0 43	-0 41	1.0	1.3			0.1	102	0.8	033	0.1	120	1.0	191
4876	Tolly Point, 1.6 miles east of...	38 56.07	76 25.02	-0 54	-1 18	-1 25	-1 20	0.7	0.7			-	-	0.6	018	-	-	0.6	196
4881	Chesapeake Bay Bridge, main channel...	38 59.50	76 23.10	-0 03	-0 19	-0 32	-0 24	0.6	0.9			0.0	-	0.5	355	-	-	0.7	190
4886	Sandy Point, 2.3 n.mi. east of...	39 00.16	76 20.93	+0 19	+0 15	+0 13	+0 29	1.1	0.9			0.0	-	0.7	025	0.0	-	0.9	230
4891	Sandy Point, 0.8 n.mi. ESE of...	39 00.24	76 22.80	-0 11	+0 24	-0 15	+0 39	0.8	0.6			-	-	0.8	020	-	-	0.7	199
4896	Sandy Point, 0.8 n.mi. ESE of...	39 00.24	76 22.80	-0 11	+0 24	-0 15	+0 05	1.2	1.5			-	-	0.7	021	-	-	0.5	210
4901	BALTIMORE HBR. APP. (off Sandy Point)...	39 02.42	76 22.67	0 00	+0 01	-0 06	+0 18	1.0	1.0			0.1	116	0.9	025	-	-	1.2	199
4906	Craighill Channel entrance, Buoy "2C"...	39 02.42	76 22.67	0 00	+0 01	-0 06	+0 18	1.0	0.9			0.0	-	0.8	025	0.0	-	0.8	189
4911	Love Point, 2.8 miles NNE of...	39 04.78	76 16.3	Current weak and variable				0.5	0.6			-	-	0.8	353	-	-	0.7	182
4916	Craighill Channel, NE of Mountain Pt...	39 04.88	76 18.73	+0 48	+0 19	+0 27	-0 07	0.8	0.5			-	-	0.6	055	0.0	-	0.4	240
4921	Craighill Channel, NE of Mountain Pt...	39 05.68	76 23.67	+0 28	+0 40	+0 25	+0 34	0.8	0.9			0.0	-	0.6	350	0.0	-	0.7	175
4926	Craighill Channel, Belvidere Shoal...	39 07.70	76 23.27	+0 10	+0 46	+0 33	+0 19	0.7	0.6			-	-	0.6	360	0.1	270	0.5	186
4931	Craighill Angle, right outside quarter...	39 07.70	76 23.27	+0 10	+0 46	+0 33	+0 19	0.7	0.6			-	-	0.6	360	0.1	270	0.5	186
4936	Swan Point, 2.7 n.mi. SW of...	39 06.48	76 18.32	+0 18	+0 42	+0 38	+0 25	0.6	0.5			0.1	078	0.5	345	0.0	-	0.5	170
4941	Swan Point, 2.7 n.mi. SW of...	39 06.48	76 18.32	-0 27	+0 30	+1 17	+0 25	0.6	0.4			-	-	0.4	342	-	-	0.4	170
4946	Swan Point, 2.15 n.mi. west of...	39 08.85	76 19.48	+0 18	+0 50	+1 05	+1 06	0.8	0.7			-	-	0.7	008	0.1	271	0.5	203
4951	Swan Point, 1.6 miles northwest of...	39 09.75	76 18.28	+0 53	+0 44	+0 38	+0 57	0.8	0.9			-	-	0.6	020	0.0	-	0.7	215
4956	Brewerton Channel Eastern Ext., Buoy "7"...	39 09.78	76 23.38	+0 16	-0 02	-0 14	-0 05	0.5	0.4			0.2	080	0.4	013	-	-	0.3	175
4961	Tolchester Channel, SW of Buoy "588"...	39 10.95	76 16.87	+0 44	+0 20	+0 48	+0 54	1.1	1.1			0.2	302	0.9	030	-	-	0.9	229
4966	Tolchester Channel, south of Buoy "617"...	39 10.95	76 16.87	+0 44	+0 20	+0 48	+0 54	1.1	1.1			0.2	302	0.9	030	-	-	0.5	217
4971	Tolchester Channel, south of Buoy "388"...	39 11.47	76 15.95	+1 43	+1 10	+0 59	+1 23	0.9	0.8			-	-	0.7	025	-	-	0.7	231
4976	Tolchester Channel, south of Buoy "388"...	39 12.87	76 17.27	+0 51	+1 08	+0 59	+0 50	0.7	0.8			-	-	0.5	028	-	-	0.6	208
4981	Tolchester Beach, 0.33 n.mi. west of...	39 12.87	76 23.72	+1 25	+1 00	+0 53	+1 06	0.4	0.5			0.0	-	0.3	035	0.0	-	0.4	225
4986	Tolchester Beach, 0.33 n.mi. west of...	39 13.03	76 14.90	+0 49	+1 20	+1 22	+1 24	1.2	1.1			0.1	285	1.0	015	-	-	0.8	201

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS				
			Lat.	Long.	Min. before Flood	h. m.	Flood	h. m.	Min. Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
	CHESAPEAKE BAY Time meridian, 75°W	ft	N	W	h. m.	h. m.	h. m.	h. m.	h. m.		knots deg.	knots deg.	knots deg.	knots deg.	
	on BALTIMORE HARBOR APPROACH, p. 101														
4976	Pooles Island, 4 miles southwest of.....	39 13.60		76 19.88	+0 59	+0 48	+0 56	+1 12	0.6 0.8	0.0 --	0.5 025	0.0 --	0.6 210		
4981	Pooles Island 2.0 n.mi. SSW of.....	15d 39 14.78		76 17.80	+1 01	+0 58	+1 03	+1 29	0.7 0.7	0.2 327	0.6 038	--	0.6 238		
4986	Pooles Island, 0.8 mile south of.....	7 39 15.7		76 16.4	+1 29	+1 24	+1 12	+1 20	0.9 1.2	0.0 --	0.7 060	0.0 --	1.0 258		
4991	Miller Island, 1.5 miles ENE of.....	7 39 16.5		76 19.9	+0 11	+0 15	+0 37	+0 25	0.6 0.3	0.0 --	0.5 000	0.0 --	0.2 185		
4996	Pooles Island, 1.6 n.mi. east of.....	16d 39 16.47		76 13.57	+1 28	+1 34	+1 45	+1 03	1.1 1.1	--	0.9 014	0.1 289	0.8 208		
5001	Robins Point, 0.7 mile ESE of.....	5 39 17.75		76 16.10	-0 03	-0 14	+0 37	-0 13	1.4 1.0	0.0 --	1.1 025	0.0 --	0.8 210		
5006	Worton Point, 1.5 n.mi. WSW of.....	17d 39 18.70		76 13.03	+2 04	+1 45	+1 27	+1 36	1.0 1.1	--	0.8 023	0.2 298	0.9 211		
5011	Worton Point, 1.1 miles northwest of.....	39 19.9		76 12.0	+1 43	+1 43	+1 38	+1 32	1.4 1.5	0.0 --	1.1 040	0.0 --	1.2 245		
5016	Howell Point, 0.8 n.mi. west of.....	15d 39 22.23		76 07.80	+2 30	+1 48	+1 19	+1 33	1.0 1.3	--	0.8 051	--	1.0 235		
5021	Howell Point, 0.4 mile NNW of.....	39 22.6		76 06.9	+1 28	+1 24	+1 20	+1 18	1.1 1.1	0.0 --	0.9 080	0.0 --	0.9 245		
5026	Grove Point, 0.7 n.mi. NW of.....	14d 39 23.78		76 03.02	+2 40	+2 01	+1 31	+2 03	0.6 1.0	0.1 131	0.5 034	--	0.8 211		
5031	Turkey Point, 1.2 n.mi. SW of.....	9d 39 26.60		76 02.03	+2 39	+1 30	+0 58	+1 00	0.6 0.8	0.2 101	0.5 021	--	0.6 193		
5036	Spesutle Island, channel north of.....	7 39 28.83		76 04.90	+1 42	+1 20	+1 49	+1 40	0.8 0.6	0.0 --	0.6 285	0.0 --	0.5 100		
5041	Rocky Pt. (Elk Neck), 0.25 n.mi. SW of.....	5d 39 29.30		75 59.85	+2 42	+1 28	+1 14	+1 49	0.6 0.7	--	0.5 009	--	0.6 196		
5046	Red Point, 0.2 mile W of, Northeast R.....	7 39 31.75		75 59.08	+1 42	+1 28	+1 57	+1 47	0.9 0.6	0.0 --	0.7 --	0.0 --	0.5 --		
5051	Havre de Grace, Susquehanna River.....	35 33.13		76 05.08	Current weak and variable										
	on CHESAPEAKE BAY ENTRANCE, p. 95														
	on HAMPTON ROADS														
5056	Thimble Shoal Channel (west end).....	15d 37 00.32		76 13.60	-0 15	+0 12	-0 02	+0 31	1.1 1.0	0.3 204	0.9 293	0.2 018	1.2 116		
	Fort Wool														
5061	0.9 mile northeast of.....	36 59.8		76 17.2	-0 48	-1 03	-1 13	-1 16	1.2 1.4	--	1.0 265	--	1.8 080		
5066	0.4 mile northeast of.....	36 59.5		76 17.8	-1 03	-0 51	-0 56	-1 21	1.2 1.1	--	1.0 258	--	1.4 066		
5071	0.7 mile southwest of.....	36 58.85		76 18.95	-1 31	-1 44	-1 55	-1 46	0.7 1.0	--	0.6 250	--	1.3 045		
5076	0.2 mile northwest of.....	36 59.30		76 18.42	-1 09	-1 12	-1 10	-1 23	1.6 1.6	--	1.3 240	--	2.0 050		
	Old Point Comfort														
5081	midchannel <33>.....	36 59.3		76 19.3	-0 37	-0 12	-0 05	-0 38	1.9 1.2	--	1.5 260	--	1.5 055		
5086	0.55 n.mi. east of.....	37 00.12		76 17.72	-3 02	-0 32	-0 17	-2 11	1.7 0.5	--	1.4 251	--	0.6 060		
5091	0.4 mile east of.....	37 00.2		76 18.0	-1 37	-1 07	-0 46	-1 41	1.6 1.0	--	1.3 235	--	1.2 045		
5096	0.2 mile south of.....	36 59.77		76 18.88	-0 37	-0 25	-0 53	-1 25	2.1 1.1	--	1.7 240	--	1.4 075		
5101	0.9 mile southwest of.....	36 59.33		76 19.57	-0 53	-0 14	-0 01	-1 11	2.1 1.2	--	1.7 240	--	1.5 050		
5106	Willoughby Spit, 0.8 mile northwest of.....	36 58.6		76 18.4	-1 32	-1 30	-1 41	-1 54	0.9 0.8	--	0.7 260	--	1.0 040		
5111	Willoughby Spit, 0.7 mile north of.....	36 58.8		76 17.3	-2 20	-1 10	-1 03	-2 34	1.2 0.6	--	1.0 285	--	0.8 080		
5116	Willoughby Bay entrance.....	36 57.7		76 17.9	-2 12	-1 55	-2 21	-2 19	0.4 0.3	--	0.3 135	--	0.4 330		
5121	Sewell's Point, channel west of.....	36 57.5		76 20.4	-0 41	-0 47	-1 23	-1 11	1.1 1.0	--	0.9 195	--	1.2 000		
5126	Norfolk Harbor Reach (Buoy R "8").....	13d 36 57.00		76 20.37	-0 18	-0 42	-1 36	-0 16	0.8 0.7	--	0.6 183	0.1 094	0.9 011		
	.....	42d 36 57.00		76 20.37	-0 33	-1 00	-0 22	+1 04	0.6 0.3	--	0.5 152	--	0.3 000		
5131	Sewell's Point, pierhead.....	7 36 56.8		76 20.1	-0 52	-0 40	-1 01	-1 04	0.7 0.6	--	0.6 195	--	0.8 010		
	Newport News														
5136	Channel, middle.....	15 36 57.3		76 22.9	-0 43	-0 23	-0 12	-1 01	1.3 0.8	--	1.1 244	--	1.1 076		
5141	Channel, west end.....	7 36 57.20		76 24.80	-0 16	-0 20	+0 03	-0 09	0.8 0.5	--	0.7 280	0.1 010	0.6 092		
5146	Middle Ground, 1 mile south of.....	7 36 56.0		76 23.2	+0 33	+0 50	+0 24	+0 26	1.4 1.0	--	1.1 270	--	1.2 100		

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS																		
NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood	h. m. h. m. h. m.	Min. Ebb	Flood Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb						
		ft	° N	° W	h. m. h. m. h. m.	on CHESAPEAKE BAY ENTRANCE, p. 95			knots deg.	knots deg.	knots deg.	knots deg.	knots deg.	knots deg.				
ELIZABETH RIVER																		
Time meridian, 75°W																		
5151	Craney Island.....	15	36 53.68	76 20.15	-1 17	-1 15	-1 53	-1 48	0.9	0.7	0.1	0.98	0.7	1.77	0.2	2.70	0.9	0.01
5156	Lamberts Point.....	15	36 52.50	76 19.95	-2 03	-1 21	-1 54	-1 50	0.6	0.6	-	-	0.5	1.43	-	-	0.7	3.28
5161	West Norfolk Bridge, Western Branch.....		36 51.5	76 20.6	-2 01	-1 40	-2 06	-2 04	0.7	0.6	-	-	0.6	2.60	-	-	0.7	0.80
5166	Seaboard Coast Line RR, Pinner Point.....		36 51.6	76 19.0	-2 08	-1 35	-1 31	-2 09	0.5	0.3	-	-	0.4	1.40	-	-	0.4	2.90
5171	Berkley Bridge, Eastern Branch.....		36 50.5	76 17.0	-2 25	-1 31	-1 36	-2 49	0.4	0.3	-	-	0.3	1.20	-	-	0.4	2.95
5176	Norfolk and Western RR, Bridge, E Branch		36 50.2	76 14.7	-1 32	-1 15	-1 41	-1 39	0.5	0.5	-	-	0.4	1.00	-	-	0.6	2.80
5181	Berkley, Southern Branch.....		36 50.0	76 17.8	-2 23	-1 17	-1 28	-2 27	0.4	0.4	-	-	0.7	2.15	-	-	0.3	3.30
5186	Chesapeake, Southern Branch.....		36 48.5	76 17.4	-1 58	-1 16	-1 30	-1 53	0.9	0.5	-	-	0.7	1.80	-	-	0.6	3.60
5191	Gilmeron Hwy. bridge, Southern Branch...		36 46.5	76 17.7	-2 08	-1 19	-1 43	-2 03	0.7	0.6	-	-	0.6	1.80	-	-	0.7	3.60
HANSEMOND RIVER																		
5196	Pig Point, 1.8 miles northeast of.....		36 55.4	76 25.1	-0 48	-0 07	+0 05	-0 41	1.0	0.8	-	-	0.8	2.85	-	-	1.0	0.70
5201	Town Point Bridge, 0.5 mile east of.....		36 53.3	76 29.0	-1 25	-0 59	-0 51	-1 07	1.1	0.6	-	-	0.9	2.65	-	-	0.8	0.70
5206	Dumpling Island.....		36 48.5	76 33.5	-1 17	-1 00	-1 26	-1 24	1.2	0.8	-	-	1.0	1.75	-	-	1.0	3.45
JAMES RIVER																		
Newport News																		
5211	0.1 mile off shipbuilding plant.....	8	36 58.8	76 26.5	+0 47	+0 37	+0 39	+0 23	1.1	1.0	-	-	0.9	3.25	-	-	1.3	1.45
5216	0.8 mile SW of shipbuilding plant.....		36 58.5	76 27.3	+0 33	+0 18	+0 13	+0 04	1.2	1.0	-	-	1.0	3.25	-	-	1.2	1.40
5221	1.5 miles SW of shipbuilding plant...	6	36 58.1	76 28.2	-0 36	0 00	-0 03	-0 43	1.2	0.9	-	-	1.0	3.50	-	-	1.1	1.40
5226	Rock Landing Shoal Channel																	
5231	South end.....		37 03.50	76 35.63	+0 39	+1 01	+1 00	+1 14	1.0	0.9	-	-	0.8	3.10	-	-	1.1	1.65
5236	Middle.....		37 05.20	76 36.83	+0 49	+1 36	+1 43	+1 09	1.4	0.8	-	-	1.1	3.45	-	-	1.0	1.55
5241	North end.....		37 06.60	76 37.95	+1 00	+1 40	+1 47	+1 22	1.6	0.8	-	-	1.3	3.40	-	-	1.0	1.45
5246	Point of Shoals, west of.....		37 03.9	76 39.6	+2 28	+2 45	+2 19	+2 21	0.4	0.7	-	-	0.3	3.25	-	-	0.9	1.95
5251	Deepwater Shoals.....		37 08.6	76 38.2	+1 42	+2 12	+1 39	+0 57	0.5	0.7	-	-	1.2	3.53	-	-	0.9	1.66
5256	Hog Point.....		37 12	76 41.5	+2 28	+2 35	+2 19	+2 11	1.4	1.0	-	-	1.0	2.60	-	-	1.3	0.70
5261	Jamestown Island, Church Point.....		37 12.2	76 47.0	+2 24	+2 34	+2 43	+2 15	1.6	1.0	-	-	1.1	3.25	-	-	1.3	1.45
5266	Chickahominy River Bridge.....		37 15.7	76 52.5	+2 05	+2 29	+2 42	+1 59	1.5	1.0	-	-	1.3	3.32	-	-	1.2	1.54
5271	Caremont Landing.....		37 14.0	76 57.2	+3 43	+3 50	+3 34	+3 26	1.8	1.2	-	-	1.5	2.90	-	-	1.5	1.25
5276	Brandon Point, 0.3 mile northeast of.....		37 16.5	76 59.2	+3 56	+3 56	+3 37	+3 27	1.5	1.0	-	-	1.2	3.50	-	-	1.3	1.70
5281	Windmill Point.....		37 18.7	77 05.7	+4 30	+4 00	+4 04	+3 36	1.6	0.8	-	-	1.3	3.10	-	-	1.0	0.65
5286	Coggins Point, 0.5 mile north of.....		37 18.4	77 10.0	+4 45	+4 18	+4 07	+4 07	0.7	0.7	-	-	0.6	2.73	-	-	0.9	0.88
5291	Appomattox River entrance.....		37 19.0	77 16.3	+4 48	+4 35	+4 39	+4 11	1.6	1.0	-	-	1.3	3.20	-	-	1.2	1.35
5296	Bermuda Hundred.....		37 18.7	77 17.1	+5 24	+4 59	+4 37	+3 58	1.2	0.6	-	-	1.0	2.71	-	-	0.8	0.80
5301	Dutch Gap Canal, 0.5 mile east of.....		37 20.2	77 16.2	+5 45	+4 52	+4 01	+4 26	1.1	1.0	-	-	0.9	0.19	-	-	1.3	1.99
5306	Rocketts <22>.....		37 22.8	77 20.8	+5 28	+5 20	+5 19	+4 56	1.0	0.7	-	-	0.8	2.70	-	-	0.9	0.90
			37 31.2	77 25.0	-	-	-	-	-	-	-	-	-	-	-	-	1.0	1.60
YORK RIVER																		
5311	York River Ent., Channel (SE end) <34>...	13d	37 07.38	76 09.20	+0 50	+1 22	+1 32	+1 00	1.3	0.8	0.3	2.56	1.0	3.42	0.3	0.74	1.0	1.62
5316	York Spit Light, 0.8 mile southwest of...	32d	37 07.38	76 09.20	-0 45	+0 58	+1 04	-0 08	0.6	0.3	0.2	0.83	0.5	3.29	0.2	2.46	0.4	1.74
5321	York River Ent., Channel (NW end).....	15d	37 12.0	76 16.0	-0 37	+0 06	+0 24	-0 13	1.0	0.6	-	-	0.8	3.23	-	-	0.8	1.45
			37 13.55	76 18.47	-1 47	-0 06	+0 43	-0 19	0.8	0.4	0.2	2.00	0.7	2.98	-	-	0.5	1.28

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TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Min. Flood before Ebb			Flood Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb	
						h. m.	h. m.	h. m.						h. m.
		ft	° ' N	° ' W	h. m. <td>h. m.<td>h. m.<td>h. m.<td></td><td>knots deg.</td><td>knots deg.</td><td>knots deg.</td><td>knots deg.</td></td></td></td>	h. m. <td>h. m.<td>h. m.<td></td><td>knots deg.</td><td>knots deg.</td><td>knots deg.</td><td>knots deg.</td></td></td>	h. m. <td>h. m.<td></td><td>knots deg.</td><td>knots deg.</td><td>knots deg.</td><td>knots deg.</td></td>	h. m. <td></td> <td>knots deg.</td> <td>knots deg.</td> <td>knots deg.</td> <td>knots deg.</td>		knots deg.	knots deg.	knots deg.	knots deg.	
on CHESAPEAKE BAY ENTRANCE, p. 95														
YORK RIVER Time meridian, 75°W														
5326	Tue Marshes Light, 0.7 n.mi. north of...	14d	37 14.80	76 23.28	+1 32	+2 05	+1 58	+1 25	1.2 0.7	-	1.0 265	-	0.9 078	
	do.	39d	37 14.80	76 23.28	+0 32	+1 03	+1 55	+1 02	1.1 0.5	-	0.9 247	-	0.6 070	
	do.	49d	37 14.80	76 23.28	-2 51	-1 32	-0 31	-1 41	0.6 0.2	-	0.5 249	-	0.3 068	
5331	Tue Marshes Light, 0.9 n.mi. WNW of...	14d	37 14.28	76 24.13	-0 16	+0 09	+0 10	-0 25	1.0 0.5	-	0.8 249	-	0.7 069	
	do.	28d	37 14.28	76 24.13	-1 15	-0 36	-0 06	-1 34	0.8 0.5	-	0.6 262	-	0.6 064	
5336	Tue Marshes Light, 2.7 miles west of													
	Midchannel.....	37 14.0	76 26.6		-0 13	+0 22	+0 18	-0 23	0.7 0.5	-	0.6 258	-	0.6 072	
5341	North edge of channel.....	37 14.2	76 26.6		-0 48	-0 17	-0 36	-1 01	0.6 0.6	-	0.5 251	-	0.7 074	
5346	South edge of channel.....	37 13.6	76 26.5		-0 26	-0 10	-0 22	-0 24	0.5 0.4	-	0.4 257	-	0.5 095	
5351	Yorktown.....	37 14.5	76 30.5		-0 30	-0 28	-0 19	-0 17	1.5 1.3	-	1.2 302	-	1.6 124	
5356	Gloucester Point, 150 yds. southeast of...	37 14.55	76 30.10		-0 35	-0 01	-0 27	-1 21	1.1 0.9	-	0.9 267	-	1.1 090	
5361	Gloucester Point, 0.4 mile southwest of...	37 14.42	76 30.65		-0 25	0 00	+0 16	-0 44	1.4 0.8	-	1.1 294	-	1.0 108	
5366	Pages Rock, 1 mile SSE of.....	37 17.6	76 34.8		-0 10	+0 24	+0 13	-0 22	1.2 0.8	-	1.0 303	-	1.0 125	
5371	Blundering Point, 0.9 mile SSW of.....	37 18.13	76 35.08		-0 22	+0 13	+0 37	-0 16	1.3 0.8	-	1.1 293	-	1.1 138	
5376	Clay Bank Pier, 100 yds. southwest of...	37 20.78	76 36.80		-0 02	+0 14	+1 17	-0 05	1.4 0.9	-	1.1 311	-	1.1 123	
5381	Allmondsville.....	37 24	76 40		+0 48	+0 44	+0 39	+0 20	1.5 0.9	-	1.2 310	-	1.1 105	
5386	Puritan Island, 0.2 mile southwest of...	37 24.83	76 41.22		+0 49	+1 05	+0 58	+0 53	1.6 0.8	-	1.3 310	-	1.1 104	
5391	Goff Point, 0.8 mile SSW of.....	37 29.97	76 47.03		+1 37	+1 36	+1 54	+1 51	1.0 0.8	-	0.9 320	-	1.0 123	
5396	West Point, 0.8 mile below.....	37 30.9	76 47.5		+1 23	+1 20	+1 14	+1 06	1.4 1.2	-	1.1 340	-	1.5 150	
5401	Lord Delaware Bridge, 100 yds. S of...	37 32.22	76 47.45		+1 37	+1 30	+1 48	+1 46	1.0 0.4	-	0.8 350	-	0.5 210	
5406	Makema, Mattaponi River.....	37 39.2	76 54.0		+2 08	+2 05	+1 59	+1 41	1.7 1.4	-	1.4 260	-	1.7 280	
5411	Walkerton, Mattaponi River.....	37 43.4	77 01.5		+3 29	+3 04	+2 50	+3 25	1.1 0.7	-	0.9 275	-	0.9 095	
5416	Eltham Bridge, 100 yds. north of.....	37 32.10	76 48.42		+2 06	+2 33	+2 17	+2 14	0.7 0.8	-	0.6 327	-	0.9 124	
5421	Lester Manor, Pamunkey River.....	37 34.9	76 59.4		+3 18	+3 30	+3 19	+3 06	1.5 0.8	-	1.2 235	-	1.0 055	
5426	Northbury, Pamunkey River.....	37 37.5	77 07.3		+4 33	+4 50	+4 24	+4 26	0.6 1.0	-	0.5 290	-	1.3 100	
MOBJACK BAY and PIANKATANK RIVER														
5431	New Point Comfort, 2.0 n.mi. WSW of...	16d	37 17.70	76 19.25	+1 03	+2 18	+1 52	+2 03	0.7 0.3	-	0.6 315	-	0.4 129	
5436	Bland Point, Piankatank River.....	37 31.8	76 21.9		+0 08	+0 25	-0 01	+0 01	0.5 0.2	-	0.4 300	-	0.2 125	
5441	Doctor Point, 0.4 mile west of.....	37 31.1	76 27.0		+0 10	-0 03	-0 48	-0 06	0.5 0.3	-	0.4 311	-	0.4 142	
RAPPAHANNOCK RIVER														
5446	Stringray Point, 1.2 n.mi. NE of.....	28d	37 34.53	76 17.08	+1 06	+0 35	-0 11	+1 01	0.5 0.4	-	0.4 293	-	0.5 121	
5451	Windmill Point, 1.0 n.mi SSW of.....	15d	37 36.00	76 17.50	+1 13	+1 53	+2 29	+1 31	0.8 0.4	-	0.7 286	0.1 188	0.5 103	
	do.	38d	37 36.00	76 17.50	+0 38	+1 57	+2 30	+0 53	0.7 0.2	-	0.6 269	-	0.3 090	
5456	Mosquito Point, 0.9 mile SSE of.....	37 35.72	76 21.08		+1 34	+2 26	+2 07	+1 12	0.8 0.7	-	0.7 265	-	0.8 090	
5461	Orchard Point, 1.0 mile south of.....	37 35.8	76 21.5		+1 23	+1 40	+1 14	+1 16	0.7 0.5	-	0.6 290	-	0.6 115	
5466	Towles Point.....	37 37.97	76 27.45		+1 27	+2 30	+2 19	+1 23	0.6 0.5	-	0.5 270	-	0.5 085	
5471	Rogue Point, 0.8 mile NW of.....	37 37.8	76 30.4		+1 44	+2 02	+2 39	+1 56	0.7 0.4	-	0.6 274	-	0.5 103	
5476	Waterview, 1.3 miles NNE of.....	37 40.28	76 33.20		-	-	-	-	0.7 0.5	-	0.6 000	-	0.6 195	
5481	Tarpley Point, 1.5 miles south of.....	37 44.95	76 35.92		+2 19	+2 54	+3 15	+2 41	0.9 0.4	-	0.7 340	-	0.6 155	
5486	Jones Point, 1.4 miles NW of.....	37 46.15	76 39.12		+2 54	+3 32	+3 49	+3 10	0.8 0.6	-	0.7 300	-	0.7 105	
5491	Sharps, 1.2 miles south of.....	37 48.03	76 41.58		+2 42	+3 18	+3 48	+2 58	1.1 0.7	-	1.1 315	-	0.9 105	
5496	Sharps, 1.2 miles south of.....	37 48.18	76 41.92		+2 57	+3 41	+4 21	+3 32	1.4 0.6	-	0.9 290	-	0.8 095	

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TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Min. before Ebb	h. m.	h. m.	h. m.	h. m.	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
		ft	° N	° W	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.	knots deg.	knots deg.
RAPPAHANNOCK RIVER Time meridian, 75°W														
5501	Bowlers Rock, 0.2 mile north of.....	37 49.58	76 44.00		+3 05	+3 36	+4 06	+3 21	1.3	0.9	-	1.0 315	-	1.1 135
5506	Accaeeck Point, 0.3 mile southwest of....	37 52.52	76 46.40		+3 18	+3 43	+3 56	+3 44	1.4	0.8	-	1.2 335	-	1.0 150
5511	Tappahannock Bridge, 1.8 miles SE of....	37 55.10	76 49.27		+3 56	+4 02	+4 25	+3 59	1.7	1.1	-	1.4 315	-	1.3 105
5516	Tappahannock Bridge.....	37 56.0	76 51.2		+4 18	+4 35	+4 09	+4 11	1.6	1.0	-	1.3 315	-	1.2 135
5521	Port Royal.....	38 10.5	77 11.4		+6 48	+7 05	+6 39	+6 41	0.9	0.6	-	0.7 310	-	0.7 130
POCOMOKE SOUND														
5526	Pocomoke Sound Approach.....	37 38.00	75 57.90		+1 14	+2 07	+2 40	+2 02	0.9	0.6	-	0.7 009	-	0.7 196
5531	Milby Point, 5.3 n.mi. WNW of.....	37 39.85	76 00.52		+2 13	+2 30	+2 28	+2 32	0.7	0.5	-	0.6 016	-	0.7 210
5536	Watts Island, 4 miles south of.....	37 43.2	75 54.0		+0 55	+0 56	+0 56	+0 40	0.6	0.3	-	0.1 120	-	0.4 197
5541	Watts Island, 2.3 n.mi. east of.....	37 47.62	75 50.83		+1 58	+2 03	+2 00	+1 57	0.7	0.5	-	0.6 027	-	0.6 247
5546	Long Point, 2.0 n.mi. northeast of.....	37 47.62	75 50.83		+1 31	+1 52	+2 10	+1 17	1.2	0.9	-	1.0 032	-	1.1 208
5551	Pocomoke R., 0.5 mile below Shelltown....	37 54.90	75 47.90		+1 29	+1 36	+1 43	+1 30	0.5	0.3	-	0.4 024	-	0.9 209
		37 58.3	75 38.7		+4 08	+3 55	+3 59	+3 31	1.4	0.7	-	1.1 045	-	0.3 211
											-		-	0.9 170
TANGIER SOUND														
5556	Tangier Sound Light, 0.5 n.mi. east of....	16d 37 47.25	75 57.83		+2 26	+2 38	+2 47	+2 35	1.2	0.7	0.1 115	0.9 019	-	0.9 195
5561	Tangier Sound Light, 1.5 miles NE of....	37 47.25	75 57.83		+2 25	+2 36	+2 54	+2 24	1.2	0.7	-	1.0 011	-	0.9 189
5566	Clump Island, 2.5 n.mi. west of.....	37 48.5	75 57.4		+2 08	+2 57	+2 44	+2 10	1.5	0.9	-	1.2 014	-	1.1 220
5571	James Island Light, 2.3 n.mi. NNE of....	40d 37 54.50	75 25.42		+3 10	+3 43	+3 46	+3 23	0.9	0.5	-	0.8 348	-	0.6 168
	do.....	14d 38 00.05	75 54.52		+3 22	+3 53	+4 03	+3 16	1.0	0.5	-	0.8 342	-	0.6 166
	do.....	39d 38 00.05	75 54.52		+3 33	+4 12	+4 20	+4 09	0.9	0.6	-	0.7 001	-	0.7 188
5576	Big Annessex River Entrance.....	92d 38 00.05	75 54.52		+3 03	+4 18	+4 13	+3 35	0.7	0.3	-	0.6 348	-	0.4 181
5581	Kedges Strait Buoy "4".....	12d 38 02.95	75 51.45		+2 12	+2 14	+2 16	+1 43	0.4	0.2	-	0.3 074	-	0.2 258
5586	Manokin R. Ent., 1.1 n.mi. E of Drum Pt.	20d 38 05.82	75 53.48		+2 51	+1 28	+1 27	+1 04	0.9	0.6	-	0.8 091	-	0.7 276
5591	Deal Is., 0.6 n.mi. W. of, at Buoy "14"....	14d 38 08.45	75 58.33		+3 23	+3 52	+3 54	+3 10	0.9	0.5	-	0.4 008	-	0.3 197
5596	Frog Point, 1.6 miles south of.....	38 12.6	75 57.3		+2 56	+3 00	+4 04	+3 36	0.7	0.3	-	0.7 000	-	0.6 181
	Wicomico River.....				+3 57	+3 55	+4 10	+4 02	1.2	0.8	-	0.6 355	-	0.4 175
5601	Long Point and Nanticoke Point, between.	9d 38 12.80	75 54.00		+3 29	+3 32	+3 36	+3 43	0.6	0.6	-	1.0 048	-	1.1 240
5606	Victor Point, 0.8 mile southwest of....	38 14.3	75 51.8		+3 48	+3 49	+4 18	+4 05	0.7	0.7	-	0.5 063	-	0.7 263
5611	Whitehaven.....	38 15.9	75 47.5		+3 34	+4 40	+4 31	+3 32	1.4	0.9	-	0.6 034	-	0.9 242
5616	Salisbury, 2 miles above.....	4 38 17.8	75 45.5		+3 38	+4 08	+4 14	+3 26	1.2	0.9	-	1.0 089	-	1.1 284
5621	Salisbury, 2 miles below.....	4 38 20.4	75 38.3		+4 01	+4 26	+4 32	+3 59	0.7	0.6	-	1.0 006	-	1.1 188
5626	Sandy Point, Nanticoke River.....	38 14.8	75 55.7		+3 52	+4 31	+4 50	+4 10	1.5	0.9	-	0.6 085	-	0.8 258
5631	Roaring Point, WSW of Nanticoke River....	18d 38 15.80	75 55.40		+3 55	+4 56	+4 46	+3 41	1.0	0.7	-	1.2 000	-	1.1 182
	do.....	37d 38 15.80	75 55.40		+3 43	+3 54	+5 14	+3 43	0.8	0.4	-	0.9 356	-	0.9 181
5636	Chapter Point, Nanticoke River.....	38 22.6	75 52.0		+5 15	+4 38	+5 21	+5 43	1.8	1.0	-	0.6 350	-	1.5 150
5641	Fishing Bay Entrance, at Buoy "2".....	15d 38 13.48	75 59.37		+3 52	+4 55	+4 42	+4 52	0.7	0.2	0.1 050	1.5 014	-	1.2 204
5646	Hooper Strait, at Buoy "4".....	14d 38 13.05	76 03.83		+0 56	+1 27	+1 56	+1 14	1.0	0.6	-	0.5 311	-	0.3 139
5651	Hooper Strait (west), at Buoy "2".....	15d 38 13.25	76 06.20		+2 05	+2 28	+2 33	+1 40	0.7	0.4	-	0.8 097	-	0.7 287
5656	Honga River Entrance, at Buoy "1A".....	26d 38 14.80	76 07.00		+2 57	+3 01	+3 57	+3 10	0.6	0.3	-	0.6 035	-	0.2 304
											-	0.5 331	-	0.1 078

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES			SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	h. m. h. m. h. m.	Min. after Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
		ft	° ' N	° ' W	h. m. h. m. h. m.	h. m. h. m. h. m.				knots deg.	knots deg.	knots deg.	knots deg.
5661	GREAT WICOMICO RIVER 1 time meridian, 75°W Sandy Point, east of.....		37 49.30	76 18.00	+1 03	+1 20	+0 54	+0 56	0 4 0.2	- -	0.3 320	- -	0.3 140
	POTOMAC RIVER												
5666	Point Lookout, 5.2 n.mi. SW of.....	13d	37 58.12	76 23.50	+2 39	+2 16	+2 18	+1 23	0.1 0.1	- -	0.1 294	- -	0.1 113
5671	Point Lookout, 3.1 n.mi. SW of.....	15d	37 59.87	76 21.75	+3 39	+4 02	+4 00	+3 26	0.4 0.3	- -	0.3 295	- -	0.4 116
5676	Point Lookout, 1.8 n.mi. SW of.....	34d	37 59.87	76 21.75	+2 49	+2 59	+3 30	+2 47	0.3 0.2	- -	0.2 303	- -	0.2 126
	do.....	14d	38 00.80	76 20.62	+3 06	+3 40	+4 28	+3 38	0.6 0.3	- -	0.1 216	- -	0.4 122
5681	Point Lookout, 1.0 n.mi. south of.....	47d	38 00.80	76 20.62	+2 13	+3 10	+3 56	+3 20	0.4 0.1	- -	0.3 309	- -	0.1 102
	do.....	15d	38 01.25	76 19.45	+2 30	+3 27	+3 54	+2 55	0.9 0.4	- -	0.2 211	- -	0.5 117
	do.....	43d	38 01.25	76 19.45	+2 05	+3 10	+4 38	+3 11	0.7 0.2	- -	0.6 271	- -	0.3 086
5686	Cornfield Point 1 mile south of.....	38 02	76 21		Current irregular					0.0 -	0.5 310	- -	0.5 130
5691	midchannel.....	38 01.1	76 21.3		+4 38	+4 55	+4 29	+4 31	0.6 0.5	- -	0.5 280	- -	0.6 110
5696	3.8 miles south of.....	37 59.4	76 21.5		+4 23	+4 40	+4 14	+4 16	0.9 0.5	- -	0.7 315	- -	0.6 100
5701	Fort Point, St. Marys River.....	38 07.8	76 26.9		Current weak and variable					- -	- -	- -	- -
5706	Yeocomico River entrance.....	38 02.1	76 31.2		Current weak and variable					- -	- -	- -	- -
5711	Piney Point 0.2 mile south of.....	38 07.8	76 32.0		+3 38	+3 55	+3 29	+3 31	1.6 0.5	- -	1.3 280	- -	0.6 145
5716	midchannel.....	38 06.9	76 32.5		+4 26	+4 35	+4 12	+4 22	0.5 0.5	- -	0.4 290	- -	0.6 150
5721	2.2 miles south of.....	38 05.9	76 33.1		+3 38	+3 55	+3 29	+3 31	0.6 0.4	- -	0.5 280	- -	0.5 130
5726	Lower Machodoc Creek entrance.....	38 08.7	76 39.3		Current weak and variable					- -	- -	- -	- -
5731	White Point, Nomini Creek entrance.....	38 08.1	76 43.3		+4 13	+4 30	+4 04	+4 06	1.5 1.0	- -	1.2 155	- -	1.2 335
5736	Bretton Bay entrance.....	38 14.5	76 41.7		+2 58	+3 15	+2 49	+2 51	0.7 0.3	- -	0.6 030	- -	0.4 200
5741	St. Clements Bay entrance.....	38 14.5	76 43.7		Current weak and variable					- -	- -	- -	- -
5746	St. Clements I., 1.8 miles southeast of.....	38 11.7	76 42.5		+5 23	+5 40	+5 14	+5 16	0.5 0.7	- -	0.4 250	- -	0.9 085
5751	St. Clements I., 1.1 miles southwest of.....	38 11.57	76 45.67		+5 09	+5 49	+5 13	+5 05	0.7 0.6	- -	0.6 281	- -	0.8 099
5756	Rock Point, Wicomico River entrance.....	38 16.4	76 49.3		+3 47	+4 36	+4 22	+3 53	0.6 0.5	- -	0.5 019	- -	0.6 174
	BALTIMORE HARBOR APPROACH, p. 101												
5761	Swan Point.....	38 16.4	76 56.7		-1 54	-2 04	-2 32	-2 09	0.4 1.0	- -	0.3 350	- -	0.8 140
5766	Dahlgren Harbor Channel.....	38 18.90	77 01.93		Current weak and variable					- -	- -	- -	- -
5771	Upper Machodoc Creek entrance.....	38 19	77 02		Current irregular					0.0 -	0.3 270	0.0 -	0.3 090
5776	Persimmon Point.....	38 22.1	76 59.4		-1 09	-1 19	-1 47	-1 24	1.5 1.6	- -	1.2 325	- -	1.4 175
5781	Potomac River Bridge, 0.4 mile south of.....	38 21.38	76 59.20		-1 25	-1 28	-1 38	-1 17	1.1 1.8	- -	0.9 000	- -	1.4 165
5786	Chapel Point, Port Tobacco River.....	38 27.9	77 02.2		Current weak and variable					- -	- -	- -	- -
5791	Maryland Point.....	38 20.8	77 11.8		-1 04	-1 14	-1 42	-1 19	1.4 1.8	- -	1.1 270	- -	1.4 080
5796	Quantico.....	38 31.3	77 16.6		-0 54	-1 04	-1 32	-1 09	0.9 1.1	- -	0.7 020	- -	0.9 200
5801	Quantico Creek entrance.....	38 31.7	77 17.3		-1 19	-1 29	-1 57	-1 34	0.6 0.6	- -	0.5 305	- -	0.5 115
5806	Freestone Point, 2.3 miles east of.....	38 35.78	77 11.88		-0 03	-0 01	-0 28	-0 06	0.9 0.9	- -	0.7 030	- -	0.7 229
5811	Hallowing Point.....	38 38.70	77 07.65		+0 12	+0 05	+0 24	+0 15	1.4 1.4	- -	1.1 345	- -	1.1 149
5816	Jones Point, Alexandria.....	38 47.62	77 02.23		+0 36	+0 01	+0 09	+0 07	1.2 1.1	- -	1.0 352	- -	0.9 171
5821	Hains Point.....	38 51.08	77 01.32		+0 20	+0 31	+0 04	+0 18	0.8 0.4	- -	0.6 359	- -	0.3 176

Endnotes can be found at the end of Table 2.2

TABLE 2.2—CURRENT DIFFERENCES AND OTHER CONSTANTS

TABLE 1.2 - CURRENT DIFFERENCES AND OTHER CONSTANTS															
NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS	AVERAGE SPEEDS AND DIRECTIONS					
					Lat.	Long.	Min. before Flood	Min. before Ebb		Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
ft	° ' N	° ' W	h. m.	h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.	knots deg.	knots deg.				
on BALTIMORE HARBOR APPROACH, p.101															
POTOMAC RIVER															
Time meridian, 75°W															
5826	Anacostia River entrance.....	38 51.8	77 00.6	Current weak and variable											
5831	South Capitol Street Bridge.....	38 52.07	77 00.38	Current weak and variable											
5836	Washington Channel, Washington, D.C.....	38 51.8	77 01.2	Current weak and variable											
5841	Virginia Channel, Washington, D.C. <13>.	38 52	77 02												
PATUXENT RIVER															
5846	Hog Point, 0.6 n.mi. north of.....	13d	38 19.08	76 24.07	-4 45	-5 29	-5 59	-6 00	0.5	0.6					
5851	do.....	41d	38 19.08	76 24.07	-6 24	-5 38	-5 36	-6 38	0.5	0.3					
5856	Drum Point, 0.3 mile SSE of.....	38 18.93	76 25.15	-5 19	-5 20	-5 25	-5 16		0.5	0.5					
5861	Sandy Point, 0.5 mile south of.....	38 18.50	76 27.30	-5 08	-5 49	-5 53	-4 55		0.5	0.6					
5866	Point Patience, 0.1 mile southwest of.....	15	38 19.70	76 29.20	-5 07	-6 12	-6 46	-6 01	0.6	1.0					
5871	Broomes Island, 0.4 mile south of.....	38 23.70	76 33.25	-5 01	-5 16	-5 02	-5 02		0.5	0.6					
5876	Sheridan Point, 0.1 mile southwest of.....	38 27.97	76 38.88	-4 33	-4 54	-4 38	-4 16		0.8	0.8					
5881	Benedict, highway bridge.....	38 30.70	76 40.33	-4 45	-4 38	-4 09	-4 35		1.0	0.6					
5886	Lyons Creek Wharf.....	38 44.8	76 41.1	-3 14	-3 24	-3 52	-3 29		1.4	1.1					
LITTLE CHOPTANK RIVER															
5886	Hills Point, 1.0 mile south of.....	38 33.0	76 18.7	Current weak and variable											
5891	Ragged Point, 1.5 miles east of.....	38 31.80	76 14.65	-4 53	-5 15	-4 29	-4 57		0.5	0.2					
CHOPTANK RIVER															
5896	Cook Point, 1.4 n.mi. NNW of.....	15d	38 38.83	76 12.40	-3 52	-4 06	-4 06	-4 24	0.8	0.7					
5901	do.....	45d	38 38.83	76 18.40	-4 09	-4 05	-4 03	-4 12	0.6	0.6					
5906	Holland Point, 2.0 n.mi. SSW of.....	14d	38 40.43	76 15.45	-3 54	-4 21	-3 26	-4 00	0.3	0.2					
5911	Chloria Point, 0.5 n.mi. SSW of.....	17d	38 37.70	76 09.10	-3 45	-3 32	-3 22	-3 58	0.6	0.5					
5916	do.....	24d	38 37.70	76 09.10	-3 48	-3 33	-3 13	-3 42	0.4	0.4					
5921	Martin Point, 0.6 n.mi. west of.....	18d	38 37.63	76 08.15	-3 18	-3 42	-3 22	-3 34	0.3	0.2					
5926	Howell Point, 0.5 n.mi. south of.....	7d	38 36.23	76 06.87	-3 17	-4 04	-3 52	-3 42	0.4	0.5					
5931	Cambridge hwy. bridge, W. of Swing Span.	18d	38 34.78	76 03.67	-2 48	-3 05	-1 07	-2 13	0.6	0.3					
5936	Off Jamaica Point.....	38 36.58	75 58.97	-2 13	-2 32	-2 44	-2 26		0.6	0.8					
5941	Poplar Point, south of.....	38 40.52	75 57.98	-1 52	-2 05	-1 56	-2 15		1.0	1.0					
5946	Dover Bridge.....	38 45.40	75 59.92	-1 19	-1 50	-1 25	-1 47		1.1	1.0					
5951	Oxford, Tred Avon River.....	38 41.72	76 10.67	-4 05	-4 05	-4 03			0.4	0.2					
5956	Easton Pt., 0.5 mi. below, Tred Avon R.	38 45.8	76 06.2	Current weak and variable											
5961	Mulberry Pt., 0.6 mi. S of, Broad Cr.	38 44.33	76 14.95	-4 07	-4 10	-4 18			0.4	0.2					
5966	Bald Eagle Pt., east of, Harris Cr.	38 43.75	76 18.30	-4 07	-4 27	-4 14			0.5	0.5					
EASTERN BAY															
5966	Poplar Island, east of south end.....	38 44.9	76 21.2	-2 20	-2 20	-2 20	-2 20		1.2	0.8					
5971	Kent Point, 1.4 n.mi. east of.....	15d	38 50.33	76 20.25	-3 04	-3 18	-3 49	-3 12	0.5	0.4					
5976	Long Point, 1 mile southeast of.....	38 50.6	76 19.6	-3 40	-3 40	-3 40	-3 40		0.6	0.5					
5981	Turkey Point, 1.3 miles WSW of.....	38 53.68	76 19.55	Current weak and variable											
5986	Parson Island, 1.4 miles west of.....	38 54.83	76 16.77	Current weak and variable											

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NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb		
		ft	N	W	h. m.	h. m.	h. m.	h. m.		knots deg.	knots deg.	knots deg.	knots deg.	
EASTERN BAY Time meridian, 75°W														
5986	Parson Island, 0.7 mile NNE of.....		38 55.48	76 14.33	- - -	- 2 45	- - -	- 2 50	0.2	0.2	0.0	- -	0.2 150	
5991	Tilghman Point, 1 mile north of.....		38 52.78	76 15.18	- - -	- 3 15	- - -	- 3 55	0.4	0.4	0.0	- -	0.3 265	
5996	Mye River, west of Bruffs Island.....	9	38 51.28	76 11.88	- 2 33	- 3 18	- 3 17	- 3 00	0.8	0.9	0.0	- -	0.7 190	
6001	Deepwater Point, Miles River.....		38 48.33	76 12.55	- 3 48	- 3 52	- 3 43	- 4 14	0.6	0.6	0.0	- -	0.5 025	
6006	Long Point, 0.8 mi. east of, Miles R....		38 46.43	76 09.32	- - -	- 3 24	- - -	- 3 45	0.4	0.2	0.0	- -	0.2 245	
WEST and SOUTH RIVERS														
6011	Cheston Point, south of, West River.....		38 51.33	76 31.43	Current weak and variable									
6016	South River entrance.....		38 54.77	76 29.43	Current weak and variable									
SEVERN and MAGOTHY RIVERS														
6021	Greenbury Point, 1.8 miles east of.....	8	38 58.40	76 25.00	- 0 57	- 1 05	- 0 51	- 0 47	0.8	0.8	0.0	- -	0.6 245	
6026	Annapolis.....		38 58.95	76 28.50	- - -	- 3 35	- - -	- 2 26	0.5	0.4	0.0	- -	0.3 110	
6031	Brewer Point, Severn River.....		39 01.83	76 31.73	- - -	- 1 22	- - -	- 1 50	0.4	0.4	0.0	- -	0.3 155	
6036	Mountain Point, Magothy River entrance..		39 03.47	76 26.23	- 2 20	- 2 00	- 1 29	- 2 04	0.8	0.4	0.0	- -	0.3 125	
CHESTER RIVER														
6041	Love Point, 1.6 n.mi. east of.....	16d	39 02.05	76 16.07	- 1 42	- 1 15	- 0 47	- 1 15	0.6	0.4	0.1	278	0.4 341	
6046	Kent Island Narrows (highway bridge)....	4	38 58.23	76 14.83	- 2 07	- 2 25	- 2 11	- 2 56	1.2	1.1	0.0	- -	0.9 190	
6051	Hail Point, 0.7 n.mi. east of.....	16d	39 00.63	76 10.95	- 0 51	- 1 08	- 1 12	- 0 37	0.5	0.6	- -	- -	0.5 168	
6056	Deep Point.....		39 06.38	76 07.23	- 0 31	- 0 33	- 0 32	- 0 18	0.6	0.9	0.0	- -	0.7 260	
6061	Chestertown.....		39 12.43	76 03.67	- 0 21	+ 0 05	- 0 02	- 0 17	0.8	0.6	0.0	- -	0.5 220	
PATAPSCO RIVER														
6066	North Point, Brewerton Channel.....	15d	39 10.70	76 26.65	Current weak and variable									
6071	Brewerton Angle.....		39 12.08	76 30.78	Current weak and variable									
6076	Fort McHenry Angle.....		39 15.45	76 34.53	Current weak and variable									
6081	Bear Creek entrance.....		39 13.8	76 29.9	Current weak and variable									
6086	Curtis Creek entrance.....		39 13.1	76 34.6	Current weak and variable									
6091	Fort McHenry, NW Harbor entrance.....		39 15.8	76 34.5	Current weak and variable									
6096	Middle Branch entrance.....		39 15.4	76 37.0	Current weak and variable									
BACK, GUNPOWDER and BUSH RIVERS														
6101	Lynch Point, Back River.....		39 15.0	76 26.3	0 00	- 0 10	0 00	- 0 10	0.7	0.5	0.0	- -	0.4 130	
6106	Gunpowder River entrance.....		39 18.7	76 18.5	- 0 24	- 0 41	+ 0 25	+ 0 05	0.5	0.4	0.0	- -	0.3 205	
6111	Bush River, 0.4 mi. SW of Bush Point....		39 21.4	76 15.4	+ 0 07	- 0 24	+ 0 21	+ 0 20	0.8	0.6	0.0	- -	0.5 165	
SASSAFRAS RIVER														
6116	Grove Point.....		39 22.7	76 02.6	+ 0 46	+ 0 46	+ 0 51	+ 0 44	0.5	0.4	0.0	- -	0.3 288	
6121	Ordinary Point, 0.4 mile west of.....		39 22.45	75 59.25	+ 0 50	+ 0 37	+ 1 17	+ 0 58	0.6	0.5	0.0	- -	0.4 345	
6126	Georgetown.....		39 21.67	75 53.17	+ 1 00	+ 0 25	+ 0 56	+ 1 25	0.4	0.5	0.0	- -	0.4 200	

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NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS					
			Lat.	Long.	Min. before Flood	h. m.	h. m.	h. m.	h. m.	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb	
					ft	° ' N	° ' W	h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.	knots deg.	knots deg.	
ELK RIVER Time meridian, 75°W																
6131	Arnold Point, 0.4 mile west of.....	17d	39 27.83	75 58.45	+1 39	+1 45	+1 24	+1 32	1.0	1.0	0.0	--	0.8	040	--	0.8 215
6136	Old Town Point Wharf, northwest of.....	29d	39 30.23	75 55.12	+2 00	+1 53	+1 49	+1 45	1.3	1.6	--	--	1.1	054	--	1.3 242
6141	..do.....		39 30.23	75 55.12	+2 07	+2 04	+1 47	+1 45	1.2	1.4	--	--	0.9	055	--	1.1 237
	Hendersons Point.....		39 33.2	75 51.6	+2 05	+2 05	+2 05	+2 05	0.6	0.9	--	--	0.5	030	--	0.7 210
CHESAPEAKE AND DELAWARE CANAL																
6145	Back Creek, 0.3 n.mi. W of Sandy Pt.....	14d	39 31.67	75 51.97	-0 08	-0 21	-0 02	-0 09	0.6	0.7	--	--	1.2	057	--	1.4 244
6151	..do.....	31d	39 31.67	75 51.97	-0 06	-0 34	+0 08	-0 07	0.6	0.6	--	--	1.2	052	--	1.2 240
6156	C&D CANAL, Chesapeake City bridge.....		39 31.7	75 48.7	Daily predictions				0.0	--	--	--	2.0	110	0.0	1.9 290
	Chesapeake City Bridge, 0.45 n.mi. E of.....	26d	39 31.67	75 48.43	-0 29	-0 20	+0 16	-0 15	1.0	0.8	--	--	2.0	092	--	1.4 273
6161	..do.....	37d	39 31.67	75 48.43	-0 33	-0 25	+0 19	-0 22	0.7	0.5	--	--	1.5	083	--	0.9 275
	Conrail Bridge, east of.....	17d	39 32.55	75 42.15	-0 37	-0 34	+0 10	-0 16	1.0	0.7	--	--	1.9	099	--	1.3 270
6166	..do.....	34d	39 32.55	75 42.15	-0 42	-0 32	+0 07	-0 39	0.7	0.5	--	--	1.4	096	--	1.0 281
	St. George Bridge, 0.1 n.mi. ENE of.....	18d	39 33.17	75 39.00	-0 59	-1 17	-0 40	-1 16	0.9	0.7	--	--	1.7	064	--	1.3 247
6171	Reedy Point Radio Tower, south of.....	19d	39 33.62	75 34.20	-1 07	-1 04	-0 02	-0 24	1.0	0.7	--	--	1.9	078	--	1.3 263
VIRGINIA, outer coast																
6176	Cape Henry Light, 0.7 mile east of.....				on CHESAPEAKE BAY ENTRANCE, p. 95											
6181	Virginia Beach, north end.....	36	55.70	75 59.60	-0 01	+0 16	-0 27	+0 01	1.2	1.5	--	--	1.0	320	--	1.9 105
6186	Virginia Beach, south end.....	36	55.90	76 01.50	-1 28	-0 04	+0 43	-0 35	1.4	0.6	--	--	1.1	355	--	0.8 165
	..do.....	36	33.00	75 52.10	-0 48	+0 19	+0 19	-0 02	0.6	0.3	--	--	0.5	350	--	0.4 170

Endnotes can be found at the end of Table 2.2

ENDNOTES

- < 1> The times of minimum before flood and ebb are indefinite.
- <13> Current seldom floods.
- <17> Tidal current is weak, averaging about 0.1 knot at maximum.
- <18> For maximum southward current only, the gates of the lock being closed to prevent northward flow. Apply difference and ratio to maximum ebb at The Narrows.
- <20> The values for the Hudson River are for the summer months, when the freshwater discharge is a minimum.
- <21> In Roundout Creek entrance between lights, eddies on the flood make navigation difficult. Little difficulty will be experienced on the ebb.
- <22> Current does not flood.
- <23> Current is rotary, turning clockwise. It flows northwest at times of "Minimum before flood" at The Narrows; northeast 1 hour after maximum flood; southeast 1 1/2 hours after "Minimum before ebb"; and southwest 2 hours after maximum ebb.
- <24> Current is rotary, turning clockwise. Minimum current of 0.2 knot sets west about the time of "Minimum before flood" at The Narrows. Minimum current of 0.2 knot sets ENE about the time of "Minimum before ebb" at The Narrows.
- <25> In Sandy Hook Bay (except in southern extremity) the current is weak.
- <26> Tidal Current is weak and rotary, averaging about 0.1 knot at maximum.
- <27> The times of minimum before flood and ebb are variable.
- <28> Current usually ebbs during period 3 hours before to 3 hours after maximum ebb. Flood is weak and variable.
- <29> To obtain speeds in midchannel use speed ratio 0.8.
- <30> Flood is usually weak and of short duration. A weak ebb or flood current occurs about 6 hours after maximum flood at Delaware Bay Entrance.
- <31> Tidal current is weak and rotary, averaging less than 0.1 knot.
- <32> Current tends to rotate clockwise. At times for "minimum before flood" there may be a weak current flowing southward while at times for "Minimum before ebb" there may be a weak current flowing northward.
- <33> Just off southernmost point, current turns about 1 hour earlier than in midchannel.
- <34> Current tends to rotate clockwise. At times for "Minimum before flood" there may be a weak current flowing WSW while at times for "minimum before ebb" there may be a weak current flowing ENE.
- <63> Turbulence with hazardous current speeds of 6 to 7 knots have been reported near the bridges in the canal. Extreme caution should be exercise.

CAUTION--During the first 2 hours of flood in channel north of Governors Island the current in Hudson River is still ebbing while during the first 1 1/2 hours of ebb in this channel the current in Hudson River is still flooding. (See Tidal Current Charts, New York Harbor.) At such times special care must be taken by large ships to navigating this channel.

TABLE 2.2 — ROTARY TIDAL CURRENTS

Station No.	Depth (ft.)	Half-hourly time increments												(after Maximum Flood at CHESAPEAKE BAY ENTRANCE)													
		0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	
4769	16d	0.31	0.26	0.25	0.25	0.24	0.24	0.23	0.24	0.23	0.22	0.21	0.18	0.15	0.10	0.10	0.11	0.15	0.17	0.18	0.22	0.29	0.33	0.34	0.33	0.31	knots
	206	221	234	248	260	269	283	297	309	313	326	337	351	012	052	085	099	121	139	157	172	178	187	192	204	degrees	

TABLE 2.3 —SPEED OF CURRENT AT ANY TIME

EXPLANATION

Though the predictions in the publication give only the slacks an maximum currents, the speed of the current at any intermediate time can be obtained approximately by the use of this table. Directions for its use are given below the table.

Before using the table for a place listed in Table 2.2 the predictions for the day in question should be first obtained by means of the differences and ratios given in Table 2.2.

The examples below follows the numbered steps in the directions.

Example 1. —Find the speed of the current in The Narrows at 6:00 on a day when the predictions which immediately precede and follow 6:00 are as follows:

(1)	Slack Water	Maximum (Flood)	
	Time	Time	Speed
	4:18	7:36	2.2 knots

Directions under the table indicated A is to be used for this station.

(2) Interval between slack and maximum flood is $7:36 - 4:18 = 3^h 18^m$. Column heading nearest to $3^h 18^m$ is $3^h 20^m$.

(3) Interval between slack and time desired is $6:00 - 4:18 = 1^h 42^m$. Line labeled $1^h 40^m$ is nearest to $1^h 42^m$.

(4) Factor in column $3^h 20^m$ and on line $1^h 40^m$ is 0.7. The above flood speed of 2.2 knots multiplied by 0.7 gives a flood speed of 1.54 knots (or 1.5 knots, since one decimal is sufficient) for the time desired.

Example 2. —Find the speed of the current in the Harlem River at Broadway Bridge at 16:30 on a day when the predictions (obtained using the difference and ratio in Table 2.2 which immediately precede and follow 16:30 are as follows:

(1)	Maximum (Ebb)		Slack Water
	Time	Speed	Time
	13:49	2.5 knots	17:25

Directions under the table indicate table B is to be used, since this station in Table 2.2 is referred to Hell Gate.

(2) Interval between slack and maximum ebb is $17:25 - 13:49 = 3^h 36^m$. Hence, use column headed $3^h 40^m$.

(3) Interval between slack and time desired is $17:25 - 16:30 = 0^h 55^m$. Hence, use line labeled $1^h 00^m$.

(4) Factor in column $3^h 40^m$ and on line $1^h 00^m$ is 0.5. The above ebb speed of 2.5 knots multiplied by 0.5 gives an ebb speed of 1.2 knots for the desired time.

When the interval between slack and maximum current is greater than $5^h 40^m$, enter the table with one-half the interval between slack and maximum current and one-half the interval between slack and the desired time and use the factor thus found.

TABLE 2.3—SPEED OF CURRENT AT ANY TIME

TABLE A

		Interval between slack and maximum current													
Interval between slack and desired time	h. m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.
	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00	5 20	5 40	
h. m.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	
0 20	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0 40	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	
1 00	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	
1 20	1.0	1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	
1 40	---	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	
2 00	---	---	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	
2 20	---	---	---	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.6	
2 40	---	---	---	---	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	
3 00	---	---	---	---	---	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.7	
3 20	---	---	---	---	---	---	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	
3 40	---	---	---	---	---	---	---	1.0	1.0	1.0	0.9	0.9	0.9	0.9	
4 00	---	---	---	---	---	---	---	---	1.0	1.0	1.0	0.9	0.9	0.9	
4 20	---	---	---	---	---	---	---	---	---	1.0	1.0	1.0	0.9	0.9	
4 40	---	---	---	---	---	---	---	---	---	---	1.0	1.0	1.0	1.0	
5 00	---	---	---	---	---	---	---	---	---	---	---	1.0	1.0	1.0	
5 20	---	---	---	---	---	---	---	---	---	---	---	---	1.0	1.0	
5 40	---	---	---	---	---	---	---	---	---	---	---	---	---	1.0	

TABLE B

		Interval between slack and maximum current													
Interval between slack and desired time	h. m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.
	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00	5 20	5 40	
h. m.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	f.	
0 20	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	
0 40	0.8	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	
1 00	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	
1 20	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5	
1 40	---	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6	
2 00	---	---	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.6	
2 20	---	---	---	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	
2 40	---	---	---	---	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.7	
3 00	---	---	---	---	---	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	
3 20	---	---	---	---	---	---	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	
3 40	---	---	---	---	---	---	---	1.0	1.0	1.0	1.0	0.9	0.9	0.9	
4 00	---	---	---	---	---	---	---	---	1.0	1.0	1.0	1.0	0.9	0.9	
4 20	---	---	---	---	---	---	---	---	---	1.0	1.0	1.0	1.0	0.9	
4 40	---	---	---	---	---	---	---	---	---	---	1.0	1.0	1.0	1.0	
5 00	---	---	---	---	---	---	---	---	---	---	---	1.0	1.0	1.0	
5 20	---	---	---	---	---	---	---	---	---	---	---	---	1.0	1.0	
5 40	---	---	---	---	---	---	---	---	---	---	---	---	---	1.0	

Use Table A for all places except those listed below for Table B.

Use Table B for Deception Pass, Seymour Narrows, Sergius Narrows, Isanotski Strait, and all stations in Table 2 which are referred to these points.

1. From predictions find the time of slack water and the time and velocity of maximum current (flood or ebb), one of which is immediately before and the other after the time for which the velocity is desired.
2. Find the interval of time between the above slack and maximum current, and enter the top of Table A or B with the interval which most nearly agrees with this value.
3. Find the interval of time between the above slack and the time desired, and enter the side of Table A or B with the interval which most nearly agrees with this value.
4. Find, in the table, the factor corresponding to the above two intervals, and multiply the maximum velocity by this factor. The result will be the approximate velocity at the time desired.

TABLE 2.4 — DURATION OF SLACK

The predicted times of slack water given in this publication indicate the instant of zero speed, which is only momentary. There is a period each side of slack water, however, during which the current is so weak that for practical purposes it may be considered negligible.

The following tables give, for various maximum currents, the approximate period of time during which weak currents not exceeding 0.1 to 0.5 knot will be encountered. This duration includes the last of the flood or ebb and the beginning of the following ebb or flood, that is half of the duration will be before and half after the time of slack water.

Table A should be used for all places except those listed below for table B.

Table B should be used for **Hell Gate, Chesapeake and Delaware Canal**, and all stations in Table 2.2 which are referred to them.

Duration of weak current near time of slack water

TABLE A

Maximum current	Period with a speed not more than—				
	0.1 knot	0.2 knot	0.3 knot	0.4 knot	0.5 knot
KNOTS	MINUTES	MINUTES	MINUTES	MINUTES	MINUTES
1.0	23	46	70	94	120
1.5	15	31	46	62	78
2.0	11	23	35	46	58
3.0	8	15	23	31	38
4.0	6	11	17	23	29
5.0	5	9	14	18	23
6.0	4	8	11	15	19
7.0	3	7	10	13	16
8.0	3	6	9	11	14
9.0	3	5	8	10	13
10.0	2	5	7	9	11

TABLE B

Maximum current	Period with a speed not more than—				
	0.1 knot	0.2 knot	0.3 knot	0.4 knot	0.5 knot
KNOTS	MINUTES	MINUTES	MINUTES	MINUTES	MINUTES
1.0	13	28	46	66	89
1.5	8	18	28	39	52
2.0	6	13	20	28	36
3.0	4	8	13	18	22
4.0	3	6	9	13	17
5.0	3	5	8	10	13

When there is a difference between the speeds of the maximum flood and ebb preceding and following the slack for which the duration is desired, it will be sufficiently accurate for practical purposes to find a separate duration for each maximum speed and take the average of the two as the duration of the weak current.

INDEX TO STATIONS
(Numbers refer to table 2)

[Stations marked with an asterisk (*) are reference stations for which daily predictions are given in table 1. Page numbers of reference stations are given in parentheses.]

	A	No.		No.
Accaceek Point.....		5506	Burlington Island.....	4401
Adams Island.....	4721,	4726	Bush River.....	6111
Albany.....		3776	Butler Bluff.....	4551
Allmondsville.....		5381	Buttermilk Channel.....	3456
Alloway Creek.....	4206,	4211		C
Ambrose Channel.....		3596	Cambridge.....	5921
Anacostia River.....	5826,	5831	Camden Marine Terminals.....	4361
Annapolis.....		6026	Cape Charles, off Wise Point.....	454
Appomattox River entrance.....		5291	Cape Charles City.....	4566
Appoquinimink River.....		4191	Cape Henlopen.....	4021-4036
Arnold Point.....		4176	Cape Henry Light... ..	4436-4461,4771,4491,6176
Arnold Point, Elk River.....		6131	Cape May Canal.....	3991,3996
Arthur Kill.....	3896-	3911	Cape May Channel.....	4001
Artificial Island.....		4196	Cape May Harbor.....	3986
Astoria, East River.....		3381	Cape May Point.....	4006-4011
	B		Castleton-on-Hudson.....	3771
Back Creek entrance.....		6146	Catskill.....	3751
Back River, Md.....		6101	Cedar Point, Md.....	4751,4756
Back River entrance, Beaufort Inlet....		6186	Chapel Hill South Channel.....	3801
Bald Eagle Point.....		5956	Chapel Point.....	5786
Baltimore Harbor Approach * (101).....		4896	Chapter Point.....	5636
Barnegat Inlet.....		3956	Cherry Island Flats.....	4296
Barrytown.....		3736	Chesapeake.....	5186
Bay Ridge.....		3611	Chesapeake and Delaware Canal * (107)..	6151
Bay Ridge Channel.....		3616	Chesapeake and Delaware Canal Ent.....	4216
Bay Shore Channel.....	4061-	4066	Chesapeake Bay.....	4441-5051
Bear Creek entrance.....		6081	Chesapeake Bay Bridge.....	4881
Bear Mountain Bridge.....		3696	Chesapeake Bay Bridge Tunnel.....	4476-4541
Ben Davis Point.....	4151-	4161	Chesapeake Bay entrance * (95).....	4451
Benedict.....		5876	Chesapeake Beach.....	4476
Bergen Point.....		3916	Chesapeake Channel.....	4496,4501
Berkley.....		5181	Chesapeake City Bridge.....	6156
Berkley Bridge.....		5171	Chester River.....	6041-6061
Bermuda Hundred.....		5296	Chestertown.....	6061
Big Stone Beach.....		4086	Cheston Point.....	6011
Big Annessex River entrance.....		5576	Chickahominy River Bridge.....	5261
Big Stone Beach.....		4081	Chlora Point.....	5906
Bland Point.....		5436	Choctank River.....	5896-5956
Bloody Point Bar Light.....		4856	Christina River.....	4291
Bluff Point.....		4656	Church Neck Point.....	4586
Blundering Point.....		5371	City Point, Va.....	5286
Bowlers Rock.....		5501	Claremont Landing.....	5266
Brandon Point.....		5271	Clay Bank Pier.....	5376
Brandywine Range.....	4071-	4076,4111	Clump Island.....	5566
Breakwater Harbor.....		4041	Coggins Point.....	5281
Breton Bay entrance.....		5736	Cohansey River.....	4166
Brewer Point.....		6031	College Point.....	4391
Brewerton Angle.....		6071	College Point Reef.....	3351
Brewerton Channel.....	4946,	6066	Conrail Bridge.....	6161
Bridgeton.....		4171	Coney Island Channel.....	3841
Bristol, N.J.....		4396	Coney Island Lt.....	3826
Broad Creek.....		5951	Cook Point.....	5896
Broadkill Slough.....		4051	Cornfield Point, Md.....	5686-5696
Broadway Bridge, Harlem River.....		3496	Cove Point.....	4766-4781
Bronx River.....		3366	Coxsackie.....	3761
Bronx-Whitestone Bridge.....		3346	Crab Point.....	4326
Brooklyn Bridge.....		3451	Craighill Angle.....	4926
Broomes Island.....		5866	Craighill Channel.....	4901,4921
Bruffs Island.....		5996	Craighill Channel.....	4916
Bulkhead Shoal Channel.....	4241-	4246	Craney Island.....	5151
			Christina River.....	4291
			Cryders Point.....	3341

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Curtis Creek entrance.....	No. 6086	Hail Point.....	No. 6051
D		Hains Point.....	5821
Dahlgren Harbor Channel.....	5766	Hallowing Point.....	5811
Deadman Shoal.....	4101	Hampton Roads.....	5056-5146
Deal Island.....	5591	Harlem River.....	3466-3501
Deep Point.....	6056	Harris Creek.....	5956
Deepwater Point.....	4286	Haverstraw.....	3686
Deepwater Point, Miles River.....	6001	Havre de Grace.....	5051
Deepwater Shoals.....	5246	Hell Gate * (77).....	3396
Delaware Bay and River.....	4001-4411	Hendersons Point.....	6141
Delaware Bay entrance * (89).....	4016	Henry Hudson Bridge.....	3501
Dobbs Ferry.....	3671	High Bridge.....	3486
Doctor Point, Chesapeake Bay.....	5441	Highland Falls.....	3701
Dover Bridge.....	5936	Hills Point.....	5886
Drum Point.....	4761, 5851	Hoffman Island.....	3831
Dumpling Island.....	5206	Hog Island, Delaware River.....	4331
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E		Hog Point, Patuxent River.....	5846
Eagle Point.....	4346	Holland Point.....	4836, 5901
East River.....	3341-3461	Honga River Entrance.....	5656
Eastern Bay.....	5961-6006	Hooper Strait, Chesapeake Bay.....	4746
Easton Point.....	5946	Hooper Strait, Tangier Sound.....	5646, 5651
Eddystone.....	4316	Horseshoe Point.....	4851
Egg Island Flats.....	4106	Howell Point.....	5016, 5021, 5916
Elizabeth River.....	5151-5191	Hudson.....	3756
Elizabethport.....	3911	Hudson River.....	3641-3781
Elk River.....	6131-6141	Hudson River entrance.....	3641
Eltham Bridge.....	5416	Hunts Point.....	3371
Essington Harbor.....	4321	Hyde Park.....	3726
F		I	
False Egg Island Point.....	4146	Indian River Inlet.....	4416
Finns Point.....	4256	J	
Fisher Point.....	4371	Jamaica Bay.....	3561-3571
Fisherman Island.....	4506-4536	Jamaica Point, off.....	5926
Fisherman Island Bridge.....	4516, 4521	James Island, Chesapeake Bay.....	4791, 4796
Fishing Bay.....	5641	James River.....	5211-5306
Five Fathom Bank Traffic Lane.....	3976	Jamestown Island.....	5256
Fivemile Point Bridge.....	4376	James Island.....	5571
Flushing Creek.....	3356	Jones Point, Alexandria, Va.....	5816
Fort McHenry.....	6091	Jones Point, Rappahannock River.....	5491
Fort McHenry Angle.....	6076	K	
Fort Point, St. Marys River.....	5701	Kedges Strait.....	5581
Fort Wool.....	5061-5076	Kelly Island.....	4136
Fourteen Foot Bank Light.....	4091-4096	Kelly Point.....	4276
Freestone Point.....	5806	Kent Island Narrows.....	6046
Frog Point.....	5596	Kent Point.....	4841, 4846, 5966
G		Kenwood Beach.....	4786
George Washington Bridge.....	3651	Keyport Channel.....	3861
Georgetown, Md.....	6126	Kill Van Kull.....	3916, 3921
Gilmerton Highway Bridge.....	5191	Kingston Point.....	3731
Gloucester.....	4351	L	
Gloucester Point.....	5356, 5361	Lamberts Point.....	5156
Goff Point, York River.....	5391	Lester Manor.....	5421
Grants Tomb.....	3646	Little Choptank River.....	5886, 5891
Great Wicomico River.....	5661	Little Creek.....	4546
Great Wicomico River Lt.....	4666	Long Island Sound, N.Y.....	3326-3336
Greenbury Point.....	6021	Long Point, Eastern Bay.....	5971, 6006
Greenwich Point, Delaware Bay.....	4356	Long Point, Pocomoke Sound.....	5546
Grove Point.....	5026, 6116	Lord Delaware Bridge.....	5401
Gunpowder River entrance.....	6106	Love Point, Chesapeake Bay.....	4906, 4911
Gwynn Island.....	4616, 4621	Love Point, Chester River.....	6041
H		Lower Machodoc Creek entrance.....	5726
Hackensack River.....	3931	Lynch Point.....	6101
		Lynnhaven Inlet.....	4471
		Lynnhaven Roads.....	4466

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PART THREE
RELATED INFORMATION

TABLE 3.1 — LOCAL MEAN TIME OF SUNRISE AND SUNSET

EXPLANATION OF TABLE

This table gives the local mean time of the rising and setting of the Sun's upper limb for every fifth day of the year. The times were computed for the instant when the true zenith distance of the Sun's center is $90^{\circ} 50', 34''$ having been allowed for horizontal refraction and $16'$ for semidiameter. No allowance has been made for elevation of the observer.

Because of the sensible variations which may be made in the time of rising or setting of the Sun by a difference in elevation of the observer, and by changes in the refraction, any great refinement in the interpolation of intermediate dates or latitudes in this table is unnecessary.

The values obtained from table 3.1 may be converted to standard time by means of table 3.2, which follows it.

TABLE 3.1 —SUNRISE AND SUNSET, 1990

Date	36° N.		38° N.		40° N.		42° N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	07 11	16 57	07 16	16 51	07 22	16 45	07 28	16 39
6	07 11	17 01	07 16	16 55	07 22	16 50	07 28	16 44
11	07 11	17 05	07 16	17 00	07 21	16 55	07 27	16 49
16	07 10	17 10	07 15	17 05	07 20	17 00	07 25	16 54
21	07 08	17 15	07 12	17 11	07 17	17 06	07 22	17 01
26	07 05	17 20	07 09	17 16	07 14	17 12	07 19	17 07
31	07 02	17 26	07 06	17 22	07 10	17 18	07 14	17 13
Feb. 5	06 58	17 31	07 01	17 27	07 05	17 24	07 09	17 20
10	06 53	17 36	06 56	17 33	06 59	17 30	07 03	17 26
15	06 48	17 41	06 50	17 38	06 53	17 35	06 56	17 32
20	06 42	17 46	06 44	17 44	06 47	17 41	06 49	17 39
25	06 36	17 51	06 38	17 49	06 40	17 47	06 42	17 45
Mar. 2	06 29	17 56	06 31	17 54	06 32	17 53	06 34	17 51
7	06 23	18 00	06 24	17 59	06 25	17 58	06 26	17 57
12	06 16	18 05	06 16	18 04	06 17	18 03	06 18	18 03
17	06 09	18 09	06 09	18 09	06 09	18 09	06 09	18 08
22	06 01	18 13	06 01	18 13	06 01	18 14	06 01	18 14
27	05 54	18 17	05 53	18 18	05 53	18 19	05 52	18 20
Apr. 1	05 47	18 22	05 46	18 23	05 45	18 24	05 43	18 25
6	05 40	18 26	05 38	18 27	05 37	18 29	05 35	18 31
11	05 33	18 30	05 31	18 32	05 29	18 34	05 27	18 36
16	05 26	18 34	05 24	18 37	05 21	18 39	05 19	18 42
21	05 20	18 38	05 17	18 41	05 14	18 44	05 11	18 47
26	05 14	18 43	05 10	18 46	05 07	18 49	05 03	18 53
May 1	05 08	18 47	05 04	18 50	05 01	18 54	04 57	18 58
6	05 03	18 51	04 59	18 55	04 55	18 59	04 50	19 04
11	04 58	18 55	04 54	19 00	04 49	19 04	04 44	19 09
16	04 54	18 59	04 49	19 04	04 44	19 09	04 39	19 14
21	04 50	19 03	04 45	19 08	04 40	19 14	04 34	19 19
26	04 47	19 07	04 42	19 12	04 37	19 18	04 31	19 24
31	04 45	19 10	04 40	19 16	04 34	19 22	04 28	19 28
June 5	04 44	19 13	04 38	19 19	04 32	19 25	04 25	19 32
10	04 43	19 16	04 37	19 22	04 31	19 28	04 24	19 35
15	04 43	19 18	04 37	19 24	04 31	19 30	04 24	19 37
20	04 43	19 20	04 37	19 26	04 31	19 32	04 24	19 39
25	04 44	19 21	04 39	19 26	04 32	19 33	04 25	19 40
30	04 46	19 21	04 40	19 27	04 34	19 33	04 27	19 39
July 5	04 49	19 20	04 43	19 26	04 37	19 32	04 30	19 39
10	04 51	19 19	04 46	19 24	04 40	19 30	04 33	19 37
15	04 55	19 17	04 49	19 22	04 43	19 28	04 37	19 34
20	04 58	19 14	04 53	19 19	04 47	19 25	04 42	19 31
25	05 02	19 11	04 57	19 16	04 52	19 21	04 46	19 26
30	05 05	19 07	05 01	19 11	04 56	19 16	04 51	19 21
Aug. 4	05 09	19 02	05 05	19 06	05 01	19 11	04 56	19 15
9	05 13	18 57	05 10	19 01	05 05	19 05	05 01	19 09
14	05 17	18 52	05 14	18 55	05 10	18 58	05 06	19 02
19	05 21	18 45	05 18	18 48	05 15	18 52	05 12	18 55
24	05 25	18 39	05 23	18 42	05 20	18 44	05 17	18 47
29	05 29	18 32	05 27	18 34	05 25	18 37	05 22	18 39
Sept. 3	05 33	18 25	05 31	18 27	05 29	18 29	05 27	18 31
8	05 37	18 18	05 35	18 19	05 34	18 21	05 32	18 22
13	05 41	18 11	05 40	18 12	05 39	18 13	05 38	18 14
18	05 44	18 03	05 44	18 04	05 43	18 04	05 43	18 05
23	05 48	17 56	05 48	17 56	05 48	17 56	05 48	17 56
28	05 52	17 49	05 53	17 48	05 53	17 48	05 53	17 47
Oct. 3	05 56	17 41	05 57	17 41	05 58	17 40	05 59	17 39
8	06 00	17 34	06 02	17 33	06 03	17 32	06 04	17 30
13	06 05	17 27	06 06	17 26	06 08	17 24	06 10	17 22
18	06 09	17 21	06 11	17 19	06 13	17 17	06 15	17 14
23	06 14	17 15	06 16	17 12	06 19	17 10	06 21	17 07
28	06 18	17 09	06 21	17 06	06 24	17 03	06 27	17 00
Nov. 2	06 23	17 04	06 26	17 00	06 30	16 57	06 33	16 53
7	06 28	16 59	06 32	16 55	06 36	16 51	06 40	16 47
12	06 33	16 55	06 37	16 51	06 41	16 47	06 46	16 42
17	06 38	16 51	06 42	16 47	06 47	16 42	06 52	16 38
22	06 43	16 49	06 48	16 44	06 53	16 39	06 58	16 34
27	06 48	16 47	06 53	16 42	06 58	16 37	07 04	16 31
Dec. 2	06 53	16 46	06 58	16 41	07 03	16 35	07 09	16 29
7	06 57	16 46	07 02	16 40	07 08	16 35	07 14	16 28
12	07 01	16 46	07 06	16 41	07 12	16 35	07 18	16 29
17	07 04	16 48	07 10	16 42	07 16	16 36	07 22	16 30
22	07 07	16 50	07 13	16 44	07 19	16 38	07 25	16 32
27	07 09	16 53	07 15	16 47	07 21	16 41	07 27	16 35
Jan. 1	07 11	16 56	07 16	16 51	07 22	16 45	07 28	16 39

Local mean time. To obtain standard time of rise or set, see table 5.

**TABLE 3.2 —REDUCTION OF LOCAL MEAN TIME TO
STANDARD TIME**

<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>	<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>	<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>
° ' ° '	Minutes	° ' ° '	Minutes	°	Hours
0 00 to 0 07	0	7 23 to 7 37	30	15	1
0 08 to 0 22	1	7 38 to 7 52	31	30	2
0 23 to 0 37	2	7 53 to 8 07	32	45	3
0 38 to 0 52	3	8 08 to 8 22	33	60	4
0 53 to 1 07	4	8 23 to 8 37	34	75	5
1 08 to 1 22	5	8 38 to 8 52	35	90	6
1 23 to 1 37	6	8 53 to 9 07	36	105	7
1 38 to 1 52	7	9 08 to 9 22	37	120	8
1 53 to 2 07	8	9 23 to 9 37	38	135	9
2 08 to 2 22	9	9 38 to 9 52	39	150	10
2 23 to 2 37	10	9 53 to 10 07	40	165	11
2 38 to 2 52	11	10 08 to 10 22	41	180	12
2 53 to 3 07	12	10 23 to 10 37	42		
3 08 to 3 22	13	10 38 to 10 52	43		
3 23 to 3 37	14	10 53 to 11 07	44		
3 38 to 3 52	15	11 08 to 11 22	45		
3 53 to 4 07	16	11 23 to 11 37	46		
4 08 to 4 22	17	11 38 to 11 52	47		
4 23 to 4 37	18	11 53 to 12 07	48		
4 38 to 4 52	19	12 08 to 12 22	49		
4 53 to 5 07	20	12 23 to 12 37	50		
5 08 to 5 22	21	12 38 to 12 52	51		
5 23 to 5 37	22	12 53 to 13 07	52		
5 38 to 5 52	23	13 08 to 13 22	53		
5 53 to 6 07	24	13 23 to 13 37	54		
6 08 to 6 22	25	13 38 to 13 52	55		
6 23 to 6 37	26	13 53 to 14 07	56		
6 38 to 6 52	27	14 08 to 14 22	57		
6 53 to 7 07	28	14 23 to 14 37	58		
7 08 to 7 22	29	14 38 to 14 52	59		

If local meridian is east of standard meridian, subtract the correction from local time.

If local meridian is west of standard meridian, add the correction to local time.

For differences of longitude less than 15°, use the first part of the table. For greater differences use both parts thus: 47°23' is equivalent to 45° + 2°23', the correction for 45° is 3 hours, the correction for 2°23' is 10 minutes; therefore the total correction for the difference in longitude 47°23' is 3 hours and 10 minutes.

TABLE 3.3 — MOONRISE AND MOONSET

EXPLANATION OF TABLE

This table gives the time of rising and setting of the Moon's upper limb for every day in the year, at each of the following places:

Washington, D.C.

New York, New York

Baltimore, Maryland

All of table 3.3 was supplied by the Nautical Almanac Office of United States Naval Observatory. Since Baltimore, Md., and Washington, D.C., are comparatively near to each other, a single table was compiled for a point midway between the two cities. The difference in time of moonrise and moonset at the point selected and at either city may vary between 0 and 2 minutes.

TABLE 3.3 —MOONRISE AND MOONSET, 1990

NEW YORK, NY

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1006	2140	0951	....	0825	2325	0939	0044	1058	0056	1309	0040	1
2	1030	2250	1023	0020	0902	....	1047	0138	1207	0126	1410	0102	2
3	1054	....	1102	0136	0948	0040	1158	0221	1312	0152	1511	0123	3
4	1119	0001	1150	0249	1042	0150	1307	0255	1415	0215	1612	0147	4
5	1148	0114	1248	0357	1146	0251	1414	0323	1516	0236	1714	0214	5
6	1222	0230	1355	0455	1255	0340	1518	0348	1617	0257	1815	0245	6
7	1305	0347	1507	0542	1406	0420	1621	0410	1718	0319	1913	0322	7
8	1358	0501	1619	0620	1515	0452	1722	0431	1820	0343	2006	0406	8
9	1501	0608	1729	0651	1622	0519	1824	0452	1921	0411	2053	0458	9
10	1613	0703	1836	0716	1727	0543	1926	0514	2022	0444	2134	0556	10
11	1727	0747	1940	0739	1830	0604	2028	0539	2119	0523	2208	0659	11
12	1839	0822	2043	0800	1932	0625	2129	0608	2210	0609	2237	0804	12
13	1948	0851	2145	0821	2034	0647	2229	0643	2255	0703	2303	0911	13
14	2054	0915	2247	0843	2136	0710	2324	0724	2333	0802	2327	1017	14
15	2157	0937	2349	0907	2238	0736	....	0812	....	0906	2350	1124	15
16	2258	0958	....	0935	2339	0807	0014	0908	0005	1012	....	1234	16
17	2359	1019	0051	1008	....	0843	0057	1010	0034	1119	0015	1346	17
18	....	1041	0152	1047	0038	0927	0134	1116	0059	1227	0043	1501	18
19	0100	1106	0250	1135	0132	1019	0205	1224	0124	1337	0116	1619	19
20	0203	1136	0342	1231	0220	1118	0233	1334	0149	1449	0156	1738	20
21	0305	1211	0428	1335	0302	1224	0259	1445	0215	1606	0247	1850	21
22	0405	1255	0508	1444	0337	1333	0324	1558	0246	1725	0349	1952	22
23	0502	1347	0541	1556	0407	1444	0350	1715	0323	1846	0501	2042	23
24	0552	1448	0610	1709	0435	1557	0419	1835	0409	2004	0617	2121	24
25	0635	1555	0636	1822	0500	1710	0453	1956	0506	2112	0733	2153	25
26	0712	1705	0701	1935	0526	1826	0534	2116	0613	2208	0845	2220	26
27	0743	1817	0726	2051	0553	1944	0624	2229	0727	2251	0953	2243	27
28	0810	1929	0754	2207	0623	2104	0725	2329	0842	2326	1057	2305	28
29	0834	2040	....	....	0659	2224	0835	....	0954	2354	1200	2327	29
30	0859	2152	....	....	0743	2338	0947	0018	1102	....	1302	2350	30
31	0924	2305	....	....	0836	....	....	....	1207	0018	....	....	31
Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1404	....	1553	....	1640	0128	1603	0230	1547	0452	1541	0618	1
2	1505	0015	1645	0044	1711	0234	1628	0340	1623	0610	1640	0734	2
3	1607	0045	1730	0138	1738	0342	1653	0451	1706	0730	1751	0841	3
4	1706	0120	1809	0238	1803	0451	1721	0604	1759	0848	1907	0935	4
5	1801	0202	1842	0343	1828	0601	1752	0720	1903	0959	2024	1019	5
6	1851	0251	1910	0451	1853	0712	1830	0838	2014	1058	2137	1053	6
7	1933	0348	1936	0559	1921	0825	1916	0956	2128	1145	2247	1122	7
8	2009	0451	2000	0707	1953	0940	2011	1109	2241	1223	2353	1147	8
9	2040	0556	2024	0816	2032	1056	2116	1213	2350	1254	....	1210	9
10	2107	0703	2050	0926	2120	1210	2227	1305	....	1320	0057	1233	10
11	2132	0810	2118	1038	2217	1319	2339	1348	0057	1344	0159	1257	11
12	2155	0917	2151	1152	2323	1419	....	1422	0201	1406	0302	1323	12
13	2219	1025	2232	1306	....	1508	0049	1451	0304	1429	0404	1352	13
14	2245	1135	2323	1419	0035	1547	0158	1516	0406	1453	0505	1427	14
15	2315	1247	....	1526	0147	1620	0303	1539	0508	1520	0604	1508	15
16	2351	1402	0024	1623	0258	1647	0408	1601	0611	1551	0659	1555	16
17	....	1518	0133	1710	0407	1712	0511	1624	0712	1627	0748	1649	17
18	0036	1631	0247	1748	0513	1735	0614	1649	0810	1710	0831	1748	18
19	0131	1737	0401	1819	0618	1757	0717	1717	0903	1759	0907	1849	19
20	0238	1831	0513	1845	0722	1821	0819	1750	0951	1855	0938	1952	20
21	0352	1915	0622	1909	0826	1847	0920	1828	1031	1954	1006	2055	21
22	0508	1950	0728	1932	0929	1916	1017	1913	1106	2056	1030	2159	22
23	0622	2019	0833	1954	1031	1950	1109	2004	1136	2200	1054	2303	23
24	0733	2044	0937	2019	1131	2031	1154	2101	1202	2304	1117	....	24
25	0841	2107	1040	2045	1226	2118	1233	2203	1227	....	1142	0010	25
26	0946	2129	1143	2116	1316	2212	1306	2306	1251	0009	1210	0120	26
27	1049	2152	1244	2153	1359	2312	1335	....	1315	0116	1244	0233	27
28	1152	2217	1342	2236	1436	....	1402	0012	1343	0226	1325	0349	28
29	1254	2245	1436	2327	1509	0016	1427	0118	1414	0340	1418	0505	29
30	1356	2318	1524	....	1537	0123	1451	0227	1452	0458	1522	0617	30
31	1456	2357	1605	0024	....	....	1518	0338	....	....	1636	0718	31

Time meridian 75° W. 0000 is midnight. 1200 is noon.

TABLE 3.3—MOONRISE AND MOONSET, 1990

BALTIMORE, MD AND WASHINGTON, DC

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1016	2153	1006	....	0840	2331	0957	0049	1114	0103	1320	0052	1
2	1041	2301	1039	0028	0919	....	1105	0143	1221	0135	1420	0114	2
3	1106	....	1119	0142	1005	0046	1214	0227	1325	0201	1520	0137	3
4	1133	0011	1208	0255	1101	0155	1323	0303	1427	0225	1620	0201	4
5	1203	0123	1306	0402	1204	0256	1428	0332	1527	0247	1721	0229	5
6	1239	0238	1413	0500	1313	0346	1531	0357	1626	0310	1821	0301	6
7	1322	0353	1524	0548	1422	0427	1633	0420	1727	0333	1918	0339	7
8	1416	0507	1635	0627	1530	0500	1733	0442	1827	0358	2012	0424	8
9	1520	0613	1743	0659	1636	0528	1833	0505	1928	0427	2059	0516	9
10	1630	0709	1849	0726	1739	0553	1934	0528	2027	0501	2140	0614	10
11	1743	0754	1952	0750	1841	0616	2035	0555	2124	0540	2214	0716	11
12	1854	0830	2054	0812	1942	0638	2135	0625	2215	0627	2245	0820	12
13	2002	0900	2154	0834	2043	0700	2234	0700	2300	0721	2312	0925	13
14	2106	0925	2255	0857	2144	0725	2329	0742	2339	0820	2337	1030	14
15	2208	0948	2356	0922	2245	0752	....	0831	....	0923	....	1137	15
16	2308	1010	....	0951	2345	0823	0019	0926	0013	1027	0002	1244	16
17	....	1032	0057	1025	....	0901	0103	1027	0042	1133	0028	1355	17
18	0008	1055	0157	1105	0043	0945	0140	1132	0109	1240	0057	1509	18
19	0108	1122	0255	1153	0137	1037	0213	1239	0135	1349	0131	1626	19
20	0209	1152	0347	1250	0225	1136	0242	1347	0201	1500	0213	1743	20
21	0311	1229	0434	1353	0308	1241	0309	1457	0229	1614	0305	1855	21
22	0410	1313	0514	1501	0344	1349	0335	1609	0301	1733	0407	1958	22
23	0507	1405	0548	1611	0415	1459	0403	1725	0339	1853	0519	2048	23
24	0557	1506	0619	1722	0444	1610	0433	1843	0426	2009	0634	2129	24
25	0641	1612	0646	1834	0511	1722	0508	2003	0524	2117	0748	2202	25
26	0719	1721	0712	1947	0538	1837	0550	2122	0631	2213	0859	2229	26
27	0751	1832	0739	2100	0606	1953	0642	2234	0744	2258	1006	2254	27
28	0819	1942	0808	2215	0638	2112	0744	2335	0858	2334	1109	2317	28
29	0845	2052	....	....	0716	2230	0852	....	1009	....	1211	2340	29
30	0910	2202	....	....	0801	2344	1004	0024	1116	0003	1311	....	30
31	0937	2314	....	....	0855	....	....	....	1219	0028	....	....	31
Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1412	0004	1558	0015	1647	0144	1613	0244	1602	0501	1558	0624	1
2	1512	0031	1650	0102	1719	0250	1639	0352	1638	0618	1658	0739	2
3	1613	0101	1736	0156	1747	0357	1706	0502	1723	0737	1808	0846	3
4	1711	0137	1815	0256	1813	0504	1735	0614	1817	0854	1924	0941	4
5	1806	0220	1849	0400	1839	0613	1807	0728	1921	1004	2039	1026	5
6	1856	0310	1919	0506	1906	0723	1846	0845	2031	1104	2152	1101	6
7	1939	0406	1946	0613	1935	0834	1933	1002	2144	1152	2300	1131	7
8	2016	0508	2011	0720	2009	0948	2029	1114	2256	1230	....	1158	8
9	2048	0612	2036	0827	2049	1103	2134	1218	....	1302	0005	1222	9
10	2116	0718	2103	0936	2138	1216	2244	1311	0004	1330	0107	1246	10
11	2142	0823	2133	1047	2235	1324	2355	1355	0110	1354	0209	1311	11
12	2206	0929	2207	1159	2341	1424	....	1430	0212	1418	0310	1338	12
13	2232	1036	2249	1313	....	1514	0104	1500	0314	1442	0411	1409	13
14	2259	1144	2341	1425	0052	1554	0211	1526	0415	1507	0511	1444	14
15	2330	1255	....	1531	0203	1628	0316	1550	0517	1535	0610	1525	15
16	....	1409	0042	1629	0313	1656	0419	1614	0618	1607	0704	1613	16
17	0007	1524	0151	1716	0420	1722	0521	1638	0718	1644	0754	1707	17
18	0053	1637	0304	1755	0525	1746	0623	1704	0815	1728	0837	1805	18
19	0149	1742	0417	1827	0629	1810	0725	1733	0909	1817	0914	1905	19
20	0256	1837	0527	1855	0732	1835	0826	1807	0956	1912	0946	2007	20
21	0409	1922	0635	1920	0834	1902	0926	1846	1037	2011	1014	2109	21
22	0524	1958	0740	1944	0936	1932	1022	1931	1113	2112	1040	2212	22
23	0637	2028	0843	2008	1037	2007	1114	2022	1144	2214	1104	2315	23
24	0747	2054	0946	2033	1136	2049	1200	2119	1211	2317	1129	....	24
25	0853	2119	1048	2101	1231	2136	1239	2219	1237	....	1155	0020	25
26	0956	2142	1149	2133	1321	2230	1313	2322	1302	0021	1224	0129	26
27	1059	2206	1250	2210	1405	2330	1343	....	1328	0127	1259	0241	27
28	1200	2232	1348	2254	1443	....	1411	0026	1356	0236	1342	0356	28
29	1301	2301	1441	2345	1516	0033	1437	0132	1429	0349	1435	0511	29
30	1402	2335	1529	....	1545	0138	1503	0239	1509	0506	1540	0622	30
31	1502	....	1611	0042	....	....	1531	0348	....	....	1654	0724	31

Time meridian 75° W. 0000 is midnight. 1200 is noon.

TABLE 3.4 —CONVERSION OF FEET TO METERS

Feet	Tenths of a Foot										Feet
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0	0.00	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	0
1	0.30	0.34	0.37	0.40	0.43	0.46	0.49	0.52	0.55	0.58	1
2	0.61	0.64	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.88	2
3	0.91	0.94	0.98	1.01	1.04	1.07	1.10	1.13	1.16	1.19	3
4	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.43	1.46	1.49	4
5	1.52	1.55	1.58	1.62	1.65	1.68	1.71	1.74	1.77	1.80	5
6	1.83	1.86	1.89	1.92	1.95	1.98	2.01	2.04	2.07	2.10	6
7	2.13	2.16	2.19	2.23	2.26	2.29	2.32	2.35	2.38	2.41	7
8	2.44	2.47	2.50	2.53	2.56	2.59	2.62	2.65	2.68	2.71	8
9	2.74	2.77	2.80	2.83	2.87	2.90	2.93	2.96	2.99	3.02	9
10	3.05	3.08	3.11	3.14	3.17	3.20	3.23	3.26	3.29	3.32	10
11	3.35	3.38	3.41	3.44	3.47	3.51	3.54	3.57	3.60	3.63	11
12	3.66	3.69	3.72	3.75	3.78	3.81	3.84	3.87	3.90	3.93	12
13	3.96	3.99	4.02	4.05	4.08	4.11	4.15	4.18	4.21	4.24	13
14	4.27	4.30	4.33	4.36	4.39	4.42	4.45	4.48	4.51	4.54	14
15	4.57	4.60	4.63	4.66	4.69	4.72	4.75	4.79	4.82	4.85	15
16	4.88	4.91	4.94	4.97	5.00	5.03	5.06	5.09	5.12	5.15	16
17	5.18	5.21	5.24	5.27	5.30	5.33	5.36	5.39	5.43	5.46	17
18	5.49	5.52	5.55	5.58	5.61	5.64	5.67	5.70	5.73	5.76	18
19	5.79	5.82	5.85	5.88	5.91	5.94	5.97	6.00	6.04	6.07	19
20	6.10	6.13	6.16	6.19	6.22	6.25	6.28	6.31	6.34	6.37	20
21	6.40	6.43	6.46	6.49	6.52	6.55	6.58	6.61	6.64	6.68	21
22	6.71	6.74	6.77	6.80	6.83	6.86	6.89	6.92	6.95	6.98	22
23	7.01	7.04	7.07	7.10	7.13	7.16	7.19	7.22	7.25	7.28	23
24	7.32	7.35	7.38	7.41	7.44	7.47	7.50	7.53	7.56	7.59	24
25	7.62	7.65	7.68	7.71	7.74	7.77	7.80	7.83	7.86	7.89	25
26	7.92	7.96	7.99	8.02	8.05	8.08	8.11	8.14	8.17	8.20	26
27	8.23	8.26	8.29	8.32	8.35	8.38	8.41	8.44	8.47	8.50	27
28	8.53	8.56	8.60	8.63	8.66	8.69	8.72	8.75	8.78	8.81	28
29	8.84	8.87	8.90	8.93	8.96	8.99	9.02	9.05	9.08	9.11	29
30	9.14	9.17	9.20	9.24	9.27	9.30	9.33	9.36	9.39	9.42	30
31	9.45	9.48	9.51	9.54	9.57	9.60	9.63	9.66	9.69	9.72	31
32	9.75	9.78	9.81	9.85	9.88	9.91	9.94	9.97	10.00	10.03	32
33	10.06	10.09	10.12	10.15	10.18	10.21	10.24	10.27	10.30	10.33	33
34	10.36	10.39	10.42	10.45	10.49	10.52	10.55	10.58	10.61	10.64	34
35	10.67	10.70	10.73	10.76	10.79	10.82	10.85	10.88	10.91	10.94	35
36	10.97	11.00	11.03	11.06	11.09	11.13	11.16	11.19	11.22	11.25	36
37	11.28	11.31	11.34	11.37	11.40	11.43	11.46	11.49	11.52	11.55	37
38	11.58	11.61	11.64	11.67	11.70	11.73	11.77	11.80	11.83	11.86	38
39	11.89	11.92	11.95	11.98	12.01	12.04	12.07	12.10	12.13	12.16	39
40	12.19	12.22	12.25	12.28	12.31	12.34	12.37	12.41	12.44	12.47	40
41	12.50	12.53	12.56	12.59	12.62	12.65	12.68	12.71	12.74	12.77	41
42	12.80	12.83	12.86	12.89	12.92	12.95	12.98	13.01	13.05	13.08	42
43	13.11	13.14	13.17	13.20	13.23	13.26	13.29	13.32	13.35	13.38	43
44	13.41	13.44	13.47	13.50	13.53	13.56	13.59	13.62	13.66	13.69	44
45	13.72	13.75	13.78	13.81	13.84	13.87	13.90	13.93	13.96	13.99	45
46	14.02	14.05	14.08	14.11	14.14	14.17	14.20	14.23	14.26	14.30	46
47	14.33	14.36	14.39	14.42	14.45	14.48	14.51	14.54	14.57	14.60	47
48	14.63	14.66	14.69	14.72	14.75	14.78	14.81	14.84	14.87	14.90	48
49	14.94	14.97	15.00	15.03	15.06	15.09	15.12	15.15	15.18	15.21	49
50	15.24	15.27	15.30	15.33	15.36	15.39	15.42	15.45	15.48	15.51	50

PUBLICATIONS RELATING TO TIDES AND TIDAL CURRENTS

TIDE TABLES

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places.

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.
Tide Tables, East Coast of North and South America (Including Greenland).
Tide Tables, Europe and West Coast of Africa (Including the Mediterranean Sea).
Tide Tables, West Coast of North and South America (Including the Hawaiian Islands).
Tide Tables, Alaskan Supplement.

TIDAL BENCH MARKS

To provide permanent points for the observed heights of the tide and the tidal datum planes determined therefrom, a system of bench marks is established at each tide station. The descriptions and elevations of these bench marks along our coast are compiled, published, and available for distribution. Requests for such bench mark data should specify the coastal locality for which the information is desired.

TIDAL CURRENT TABLES

Accompanying the rise and fall of the tide is a periodic horizontal flow of the water known as the tidal current. Advance information relative to these currents is made available in annual tidal current tables which include daily predictions of the times of slack water and the times and velocities of strength of flood and ebb currents for a number of waterways together with differences for obtaining predictions for numerous other places.

Tidal Current Tables, Atlantic Coast of North America.
Tidal Current Tables, Pacific Coast of North America and Asia.

TIDAL CURRENT CHARTS

Each publication consists of a set of 12 charts which depict, by means of arrows and figures, the direction and speed of the tidal current for each hour of the tidal cycle. The charts, which may be used for any year, present a comprehensive view of the tidal current movement in the respective waterways as a whole and also supply a means for readily determining for any time the direction and speed of the current at various localities throughout the water areas covered. The Narragansett Bay tidal current chart is to be used with the annual tide tables. The other charts require the annual tidal current tables.

Tidal Current Charts, Boston Harbor.
Tidal Current Charts, Charleston Harbor, S.C.
Tidal Current Charts, Delaware Bay and River.
Tidal Current Charts, Long Island Sound and Block Island Sound.
Tidal Current Charts, Narragansett Bay.
Tidal Current Charts, Narragansett Bay to Nantucket Sound.
Tidal Current Charts, New York Harbor.
Tidal Current Charts, Puget Sound, Northern Part.
Tidal Current Charts, Puget Sound, Southern Part.
Tidal Current Charts, San Francisco Bay.
Tidal Current Charts, Upper Chesapeake Bay.
Tidal Current Charts, Tampa Bay.

TIDAL CURRENT DIAGRAMS

The tidal current diagrams are a series of 12 monthly diagrams to be used with the tidal current charts to give the user a convenient method to determine the current flow on a particular day.

Tidal Current Diagrams for Long Island Sound and Block Island Sound.

Tidal Current Diagrams for Boston Harbor.

Tidal Current Diagrams for New York Harbor.

GLOSSARY OF TERMS

ANNUAL INEQUALITY—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.

APOGEAN TIDES OR TIDAL CURRENTS—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).

AUTOMATIC TIDE GAGE—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height, versus corresponding time of the tide, is recorded.

BENCH MARK (BM)—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark* is one near a tide station to which the tide staff and tidal datums are referred. A *Geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.

CHART DATUM—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.

CURRENT—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.

CURRENT DIFFERENCE—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.

CURRENT ELLIPSE—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximat-

ing an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.

CURRENT METER—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.

DATUM (vertical)—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks*.

DAYLIGHT SAVING TIME—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.

DIURNAL—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.

DIURNAL INEQUALITY—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of

the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of the day at the times of the tropic tides. Mean and tropic inequalities as defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality*.

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb*; it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called *second ebb* after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called *first flood*; it then decreases, reaching a minimum flood near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called *second flood* after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an *agger*.

DURATION OF FLOOD AND DURATION OF EBB—*Duration of flood* is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—

Duration of rise is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without coming to a slack or reversing. The expression *maximum ebb* is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semi monthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression *maximum flood* is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range*.

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum formerly designated

for the coastal waters of the Gulf Coast of the United States. It was defined as *mean lower low water* when the type of tide was mixed and *mean low water* when the type of tide was diurnal.

HALF-TIDE LEVEL—See *mean tide level*

HARMONIC ANALYSIS—The mathematical process by which the observed tide or tidal current at any place is separated into basic harmonic constituents.

HARMONIC CONSTANTS—The amplitudes and epochs of the harmonic constituents of the tide or tidal current at any place.

HARMONIC CONSTITUENT—One of the harmonic elements in a mathematical expression for the tide-producing force and in corresponding formulas for the tide or tidal current. Each constituent represents a periodic change or variation in the relative positions of the Earth, Moon, and Sun. A single constituent is usually written in the form $y = A \cos(at + \alpha)$, in which y is a function of time as expressed by the symbol t and is reckoned from a specific origin. The coefficient A is called the amplitude of the constituent and is a measure of its relative importance. The angle $(at + \alpha)$ changes uniformly and its value at any time is called the phase of the constituent. The speed of the constituent is the rate of change in its phase and is represented by the symbol a in the formula. The quantity α is the phase of the constituent at the initial instant from which the time is reckoned. The period of the constituent is the time required for the phase to change through 360° and is the cycle of the astronomical condition represented by the constituent.

HIGH WATER (HW)—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide*, is discouraged.

HIGHER HIGH WATER (HHW)—The higher of the two high waters of any tidal day.

HIGHER LOW WATER (HLW)—The higher of the two low waters of any tidal day.

HYDRAULIC CURRENT—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.

KNOT—A speed unit of 1 international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.

LOW WATER (LW)—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, *low tide*, is discouraged.

LOWER HIGH WATER (LHW)—The lower of the two high waters of any tidal day.

LOWER LOW WATER (LLW)—The lower of the two low waters of any tidal day.

LUNAR DAY—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.

LUNAR INTERVAL—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is 0.069 L , in which L is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.

LUNICURRENT INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval* and *strength of ebb interval*, which may be abbreviated to *flood interval* and *ebb interval*, respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

LUNITIDAL INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to *high water interval* (HWI). Similarly the mean low water lunitidal interval is abbreviated to *low water interval* (LWI). The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

MEAN HIGH WATER (MHW)—A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations

with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN HIGHER HIGH WATER (MHHW)—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.

MEAN HIGHER HIGH WATER LINE (MHHWL)—The intersection of the land with the water surface at the elevation of mean higher high water.

MEAN LOW WATER (MLW)—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN LOW WATER SPRINGS (MLWS)—A tidal datum. Frequently abbreviated *spring low water*. The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).

MEAN LOWER LOW WATER (MLLW)—A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.

MEAN RANGE OF TIDE (Mn)—The difference in height between mean high water and mean low water.

MEAN RIVER LEVEL—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.

MEAN SEA LEVEL (MSL)—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the

National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.

MEAN TIDE LEVEL (MTL)—Also called half-tide level. A tidal datum midway between mean high water and mean low water.

MIXED TIDE—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.

NEAP TIDES OR TIDAL CURRENTS—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (N_p) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called *neap low water* or *low water neaps* (MLWN).

PERIGEAN TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (P_n) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.

RANGE OF TIDE—The difference in height between consecutive high and low waters, the *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range. For other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables* and *Tidal Current Tables*, and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMI-DIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progres-

sive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (Sg) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water* or *mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water* or *mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of

observations is reduced by comparison with simultaneous observations from a control current station. (2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding the time or height for the subordinate station.

TIDE—The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (G_c), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (S_c) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (M_c) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* ($TcHHW$), *tropic lower high water* ($TcLHW$), *tropic higher low water* ($TcHLW$), and *tropic lower low water* ($TcLLW$).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal*; when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed*; and when there is only one high water and one low water in each tidal day, it is said to be *diurnal*.

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.

